

Research and Practice on the Training Model of Design Talents to Improve Practical Ability*

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Abstract—In the process of application-oriented transformation, the colleges and universities should explore the teaching reform to improve students' practical ability in combination with the school-running orientation and the development direction of disciplines and majors, and establish comprehensive, integrated, exemplary and sustainable development strategies on the basis of the training of practical ability. This paper summarizes the experience of transformation development through many years of teaching practice, and puts forward the talent training mode of "1 CORE 4 and MAIN LINES". Focusing on the goal of improving practical ability of application-oriented innovative design talents, the schools should carry out in-depth research from professional quality, realization ways and forms, so as to summarize the talent training mode with promotion value, promote work in all areas by drawing upon the experience gained on key points to promote the education and teaching reform as a whole and improve the overall education quality.

Keywords —*transformation; improvement of practical ability; design talent; training mode*

I. INTRODUCTION

In the transformation and development of local universities into application-oriented universities, it is definitely not a simple vocational education upgrade. Curriculum teaching is the most important support point for the construction of a scientific and rational applied talent training system, and the cultivation of improving the students' practical ability is the key point of applied undergraduate curriculum teaching. This project is an innovative practice of design talent training mode based on the improvement of practical ability in the context of university transformation. Through the specific steps, the innovative practice of the design talent training model is carried out, the talent training model with promotion value is summarized, and the point is to promote the education and teaching reform as a whole and improve the overall education quality.

II. OVERALL FRAMEWORK AND THINKING

A. Teaching Content Reform

The school should set up the course teaching model that improves students' practical ability through the reform of

project course teaching contents. By relying on the opportunity of the school actively promotes the innovation of course teaching in the transformation development, the school should carry out the reform of course teaching contents.

According to the syllabus, the teaching content shall be divided into modular teaching content. The basic idea of theoretical teaching content + practical teaching content complements each other penetrates in each modular teaching content. The original theoretical teaching contents shall be simplified, and the practical training course contents shall be increased and offered. That is to say, the course contents shall be composed of theory and practical training after the reform. By using the new thinking and new methods of "practicalness", the school should cultivate students' innovation thought, spirit and ability in design major; the school should study the talent training mode on the basis of practicalness, including talent training program, teaching methods, teaching arrangement, course teaching, system discussion, entrepreneurial practice, etc.

B. Internship and Practical Training of the Course

It is required to carry out the innovative practice of the training mode of design talents, so as to summarize the training mode of talents with promotion value. The school should build the training mode that can improve the students' engineering and technology practice ability by means of the reform through the classroom teaching method of students' participation. The school should use a variety of practical activities to stimulate students' interest and desire, and design education has changed from "the teachers let students learn" to "the students themselves want to learn", so as to enhance the ability of personal hands-on exploration and problem-solving.

In terms of professional ability structure, the students should pay attention to the training of creativity, aesthetics and skill performance, the accumulation of comprehensive knowledge, the improvement of entrepreneurial skills, the training of entrepreneurial spirit, the strengthening of entrepreneurial awareness, the encouragement of pioneering practice, and the training of the conditions or qualities that entrepreneurs should have. Establish a course module that runs through the guiding ideology of practice concept: 1. Professional design education module; 2. Practical training module; the experiential teaching, project teaching, DIY teaching, VR teaching in this module have achieved the expected results. 3. Internet module 4. Set up the course

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expansion of the aided design course. Under the premise of sufficient visit, the cooperative relationship with many enterprises should be established, which has laid the solid foundation for better realization of experiential teaching and project teaching.

C. Course Practice Proportion and Development Form

By adopting the opportunity of constantly strengthening the construction of course practice teaching in the transformation development of the school, the school should reform the course practice teaching system to increase the proportion of course practice teaching from 30% to about 50%, which mainly involves "individual manual training" and "comprehensive manual training". The individual practical training shall carry out block treatment according to the knowledge module of the courses and the comprehensive manual training will recombine the design system for practical teaching, which makes students have a complete and clear understanding and master of the design process.

First of all, through the discussion of the teaching and research office, the course with high practical requirements will be adjusted, and the practical period of them will be increased to more than 30%. Then the specific contents of individual practice and comprehensive manual training shall be clarified. For example, in the industrial design major, the Drawing, the Hand-painted Performance Techniques, the Modeling, the Design Procedures and Methods, and the Model Making are all individual practice. After the fourth semester, the comprehensive manual training will be arranged to carry out

continuous and penetrating training for individual practice in the early stage, such as the Product Bionic Design, the Conceptual Design, the Product Design, etc. The students complete the whole process from market research - user analysis - design positioning - material selection - drawing and performance - modeling rendering - product model production, which emphasizes the comprehensive training of the whole design process.

III. TALENT TRAINING MODE OF "1 CORE 4 AND MAIN LINES"

For the construction and practice of "1 CORE 4 and MAIN LINES" talent training mode, the "1 CORE 4 and MAIN LINES" is the training mode of talents with professional characteristics that takes the improvement of practical ability as the core and the cultivation of "professional basic quality", "professional application", "practical expansion" and "industry and industrial service" as the four main lines. (See "Fig. 1")

The model has four layers: total goal layer, sub goal layer, measure layer and ability layer. Total goal layer: improves the practical ability of applied innovative design talents. Sub goal layer: "professional basic quality", "professional application ability", "practice expansion" and "industrial service ability"; measure layer: takes four qualities, two ways, three forms and four module courses for the four sub goals to integrate five teaching methods, so as to improve three major skills. Ability layer: design practice ability, design performance ability, design innovation ability, design process seizing and design service ability.

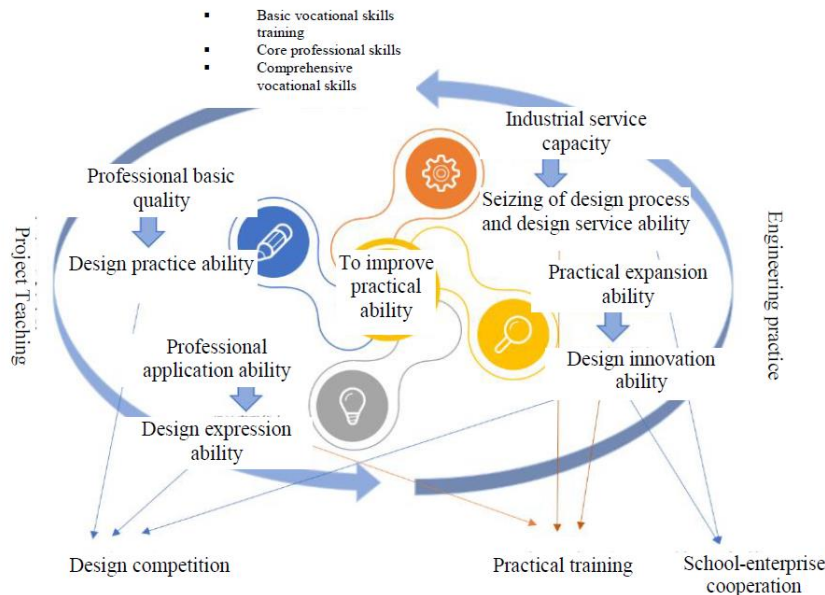


Fig. 1. Talent training mode diagram of "1 CORE 4 and MAIN LINES".

IV. TRAINING PROCESS

A. Main Line of Professional Quality

"Four qualities" are to promote the training of "four abilities". Four qualities: design practice quality, design

performance quality, design innovation quality, design process and design service. Four abilities: design practice ability, design performance ability and design innovation ability, design process seizing and design service ability.

B. Implementation Ways

"Two ways" are to promote the cultivation of "three skills". Two ways: the first is to urge students to transform the theoretical knowledge they have learned into design practice through project teaching; the second is to find problems in specific projects and summarize experience through engineering practice, so as to improve students' professional skill levels. Three skills: basic vocational skills training, core vocational skills training and comprehensive vocational skills training.

C. Development Forms

The "three forms" are mainly aimed at the main line of industrial services: first, under the guidance of professional teachers in the school, the students should actively participate in the design competitions of various levels to improve their hands-on design ability; second, the school should arrange senior students to participate in the "practical training" in the enterprises in an orderly manner to reduce the distance between the schools and the enterprises in the undergraduate training; third, under the double guidance of teachers and enterprises, the school should establish the school-enterprise cooperation teams by relying on the practice training platform at both ends of the schools and the enterprises according to the project dynamics to carry out horizontal industrial design services, so as to improve students' ability of team work, product planning, innovative design, project management and intellectual property protection.

D. Four Module Courses

1) *Professional design education module*: In terms of professional ability structure, the school should pay attention to the ability cultivation of creativity, aesthetics and technical performance. The correct guiding ideology shall be established from the three systems of theoretical course, basic course and professional course, that is, the core ideology of course teaching should run through the innovative teaching, improve the students' aesthetic and technical ability while cultivating their creative ability.

2) *Practice and practical training module*: After in-depth discussion by each teaching and research office, according to the teaching purpose and content of each course, it can be determined which practical training means will be used, such as experiential teaching, project teaching, flipped classroom, DIY teaching, VR teaching and other teaching means to improve students' practical ability and skill level. For example, in the course of Product Materials and Technology, DIY teaching and experiential teaching are adopted to make students understand and master the characteristics and processing technology of product materials. In the course of Bionics Design, VR virtual form is adopted to improve the ability of transforming from two-dimensional drawings to three-dimensional entities, and the transformation from the bionic prototype of concretization to the appearance of abstract products.

3) *Internet module*: With classical courses as the representative, online virtual communities and offline physical spaces shall be established through Internet resources. Through online virtual communities, the students can exchange and share knowledge to achieve resource sharing; on the offline, the students can adopt professional laboratories to gather together to achieve creative resultant by working together and produce thinking collisions by sharing knowledge.

4) *Establishment of the extension courses of aided design courses*: A large number of practical activities require not only professional knowledge, but also related knowledge extension. After guiding a number of practical activities of college students, it is found that design education must be supported by a wealth of extension courses, such as business management, policies and regulations, intellectual property rights and other broader humanistic knowledge. Students should be encouraged to actively apply for these extension courses.

V. DEMONSTRATION EFFECT AND INNOVATIVENESS

The innovative practice of the training mode of design talents is to boost the practical ability against the background of the transformation of colleges and universities, the innovative practice of the training mode of design talents shall be carried out through specific steps, so as to summarize the training mode of talents with promotion value, promote work in all areas by drawing upon the experience gained on key points to promote the education and teaching reform as a whole and improve the overall education quality. As for the construction and practice of "1 CORE 4 and MAIN LINES" talent training mode, it takes the improvement of practical ability as the core and remains the training mode of talents with major characteristics by taking the cultivation of "professional basic literacy", "professional application", "practical expansion" and "industry, industrial service" as the four main lines.

The teaching of artistic practice should take students as the main body, teachers as the leading, and combine teaching with educating. The process of practical teaching should be the process of active interaction between the teachers and the students, and the ideal state of the teaching of artistic practice should be the organic integration of theoretical teaching and practical teaching. Teachers can adopt experiential teaching, project teaching, flipped classroom, DIY teaching, VR teaching and other means in the classroom, so that the students and teachers can produce much richer interaction. In the process of design, the students are no longer on the aesthetic feeling of surface and form, but are to deepen their absorption capacity of theoretical knowledge and cultivate their practical ability and innovation consciousness.

Practice teaching should be combined with "industry-university-research cooperation", strengthen the contact between the students and the society, and attach importance to the cultivation of students' independent ability and comprehensive design quality in order to adapt to the needs of society. "Industry-university-research cooperation" is not

only a practical teaching method, but also a social phenomenon that conforms to the law of artistic design education. The construction of "industry-university-research cooperation" platform is conducive to the cultivation of comprehensive artistic design talents that conform to the needs and development of the society, breaking the schools and enterprises that are two seemingly unrelated but actually closely related individuals. Schools, enterprises and social institutions that are organically connected on this platform, play different roles respectively and jointly cultivate the design talents that are suitable for their own development and requirement.

VI. CONCLUSION

Through the construction and practice of "1 CORE 4 and MAIN LINES" talent training mode, the proportion of practical courses shall be increased by diversified teaching methods, the professional knowledge and skills of students will be experienced in practice, and their own shortcomings will be found in the process of practice, and then they will carry out continuous improvement and advancement. Through comprehensive practical training, practice week and graduation practice, the students can go out of the classroom to carry out practice in the enterprises, learn the cutting-edge knowledge of the industry in the enterprise practice, understand the current people's requirements and standards for the students majoring in art and design, feel the intense and cruel competition in the industry, so that the students can constantly spur on themselves, constantly learn and absorb new knowledge, improve their independent learning ability and continuous innovation to avoid being eliminated by society. The colleges and universities in the transformation and development can also break away from the shackles of traditional education and dare to try: for example, in the daily teaching work, the studio teaching links can be introduced, the spare time can be used to arrange students to study and practice in professional laboratories, the course teachers can in turn carry out lectures and coach the design completion project guidance, and the crossing research project practice of enterprises can be made. It should introduce projects that are suitable for teaching practice, organize students to complete the complete R&D process of conception, technology, design and production trial. According to the grade, the teachers can choose the design projects with different degrees of difficulty and complexity, so as to teach students in accordance of their aptitude and guide them by classification. Different courses are relatively different from enterprises, design companies and design colleges to go out for purposeful study tour, investigation and teaching observation; it should go deeply into the enterprise training bases to carry out crossing research project design practice. It should carry out the innovative practice of the training mode of design talents through the specific steps, promote work in all areas by drawing upon the experience gained on key points to promote the education and teaching reform as a whole and improve the overall education quality.

REFERENCES

- [1] Primary Investigation on the Reform of the Training Mode of Artistic Design Talents [J]. Xie Haitao. *Education and Modernization*. 2010 (01). (in Chinese)
- [2] Construction Concept and Practice of Interdisciplinary Maker Education Platform in Colleges and Universities [J]. Li Shuangshou, Yang Jianxin. *Modern Education Technology*. 2017 (08). (in Chinese)
- [3] Exploration on Interdisciplinary and Multi-specialty Collaborative Practice Teaching [J]. Zhu Kerong, Wang Tong. *Modern Education Management*. 2014 (01). (in Chinese)
- [4] Research on the Talent Training Mode of Visual Communication Major in Local Undergraduate Colleges against the Background of Transformation [J]. Lu Lan. *Popular Literature and Art*. 2016 (12). (in Chinese)
- [5] Research on the Educational Curriculum and Teaching Development of Graphic Design in China in the New Era [D]. Liu Huadi, Nanjing University of Arts, 2016. (in Chinese)
- [6] Research on the Talent Training Mode of Visual Communication Major against the Background of informatization [D]. Wang Yu, Northeast Petroleum University, 2016. (in Chinese)
- [7] Discussion on the Applied Talents Training Mode Taking Employment as the Orientation in Colleges and Universities [J]. Ni Xiaoxiao. *China Forestry Education*. 2011 (03). (in Chinese)