

Exploration of Animation Teaching in Colleges under the Mode of “Industry and Education and Research”

Take Film-Video-Animation School of Sichuan Fine Arts Institute as an Example

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Abstract—Sichuan Fine Arts Institute takes the construction of Shimei Animation Experimental Teaching Base as an opportunity, to introduce the enterprise resources into the campus; introduce the production project into teaching; incorporate the enterprise management mechanism, production process and industrial standards into the curriculum under the concept guidance of "replacing experiment with practice, and enhancing students' practical innovation ability". And it has set up the most systematic and complete platform of “industry, education and research” as well as the technology driven platform and scientific research platform, to drive the transformation of teaching achievements to social achievements. Taking the Film-Video-Animation School of Sichuan Fine Arts Institute as an example, the mode of “industry, education and research” in the exploration of animation teaching in colleges is worthy of reference.

Keywords—“industry and education and research” mode; animation teaching; reference

I. INTRODUCTION

In order to solve the problems of science and technology strength's separating from enterprises, having difficulties in transformation of scientific and technological achievements, enterprises' weak independent innovation ability and lack of market competition that hinder China's economic development caused by the long-term planned economy system in China, the State Economic and Trade Commission, Ministry of Education and Chinese Academy of Sciences has organized and implemented the “joint development project of industry, education and research” on a national scale.

In the process of realizing systematic construction, various main bodies such as colleges, government departments, enterprises and scientific research institutions play their respective functions actively, and establish a reasonable interaction mechanism. Among them, institutions of higher education and scientific research institutions have the obvious advantages in terms of scientific research, achievements, education and information, while enterprises, especially state-owned large and medium-sized enterprises, are the core the system. Therefore, the innovation model combining the three

aspects is increasingly promoting the development of technology and economy, which deserves high attention.

In 2005, in response to the above call, Sichuan fine Arts Institute and Chongqing Broadcasting Group jointly formed Chongqing Shimei Animation Art Co., Ltd., and set up company's animation production and research and development institutions in the Sichuan Fine Arts Institution, becoming the teaching and practice base for animation specialty in Sichuan Fine Arts Institution, providing an all-dimensional platform for teaching, practice, scientific research, animation creation, animation product production and promotion for the animation for the animation specialty of Sichuan Fine Arts Institution, enabling the animation specialty to realize the cultivation mode reform of combining “industry, education and research”. This interactive mode has greatly improved animation school's education quality, which has become the model in Sichuan Fine Arts Institution and even the innovative talent cultivation mode reform in colleges.

The Film-Video-Animation School of Sichuan Fine Arts Institute is the construction point of characteristic specialty in the institutions of higher education at national level, national animation industry base, experiment zone of talent cultivation mode innovation at national level, refer to “Fig. 1”, “Fig. 2”, “Fig. 3” and “Fig. 4”. Under the concept guidance of “replacing experiment with practice, and enhancing students' practical innovation ability”, introduce enterprise resources into campus, introduce production project into teaching, and incorporate enterprise management mechanism, production process and industrial standard into the curriculum. Set up the most systematic and complete platform for industry, education and research and technology driven platform as well as scientific research platform, to drive the transform of teaching achievements to social achievements. In 2009, the project of “Project-based Course, Practice-based Experiment, and Product-based Works—Construction and Practice of New System of Animation Specialty Experimental Teaching as completed by Sichuan Fine Arts Institution won the first prize of the Sixth Higher Education Teaching Achievements at national level. “Fig. 5” shows the first prize of teaching achievements at national level first won by China's higher art education, indicating Sichuan Fine Arts Institution's success

and progress in education and teaching, and at the same time, marks the enhancement of China's higher art education level.



Fig. 1. Film-Video-Animation School of Sichuan Fine Arts Institute



Fig. 2. National Animation Industry Base



Fig. 3. Construction Point of Characteristic Specialty in Institutions of Higher Education at National Level



Fig. 4. Experiment Zone of Talent Cultivation Mode Innovation at National Level



Fig. 5. First Prize of the Sixth Higher Education Teaching Achievements at National Level host by Ministry of Education

II. "INDUSTRY, EDUCATION AND RESEARCH" MODE SETS DOWN ROOT IN FILM-VIDEO-ANIMATION SCHOOL OF SICHUAN FINE ARTS INSTITUTE

The trend of technical, international and highly professional in today's social and economic development makes the enterprise need exchange of large amount of technology, talents, information, funds and material for engaging in scientific and technological development. The exchanges and cooperation with colleges and scientific research institutions with abundant intelligence, knowledge and information resources has become the enterprises' inevitable choice to improve innovation ability.

The cooperation of industry, education and research is the collaboration and integration of scientific research, education and production in terms of function and resource advantages, is the docking and coupling of technical innovation in upper stream, middle stream and lower stream, meeting the social productivity development and technological innovation law, having strong technological innovation mechanism, being the effective realization form and means for optimizing science and technology behavior of enterprises.

"At this point, dialectical relations of interdependence, mutual condition and mutual development of industry, education and research, as well as the concept that combination of industry, education and research is the inevitable development of three systems of industry, education and research, and the trend of economic and social development have been established further. The important position of industry-education-research combination has been firmly established in China's economic construction.¹

The discipline of animation is a subject with high technical content, and animation has its new development requirements. Its difference with the discipline of traditional teaching nature has decided that it could not development only rely on the power of colleges. As for the creation of a large animation works, the investment of new technology, equipment and funds is needed in addition to large team cooperation for its complex work process, involving the

¹ Quote: the interpretation of "industry-study-research combination" and "engineering integration" (2)
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startling hardware and software environment, such as the high-definition video equipment, motion capture, 3D animation rendering, post special effects editing, broadcasting, etc., funded by completely by the college's own power and government funded scientific research equipment. This "threshold" is difficult to cross. The traditional teaching mode cannot adapt to the development of this emerging discipline.

In order to lower the "threshold", and make students adapt to the industry, enterprise and market quickly, and provide "fast track" for the development of animation, the mode of "industry, education and research" set down root in Sichuan Fine Arts Institution. It can be said that it is the industrial characteristics of the animation discipline that promotes the generation of "industry, education and research" mode. Facts have proven that there are differences in this mode and traditional mode, and this mode is the new one developed from traditional mode. Refer to "Fig. 6" and "Fig. 7".



Fig. 6. Shimei Animation Experimental Teaching Base



Fig. 7. Shimei Animation Experimental Teaching Base

III. CONCEPT OF "INDUSTRY, EDUCATION AND RESEARCH" MODE

A. Lay Emphasis on Practice: Joint Participation by Teachers and Students to Guide Product Development under Project-based Curriculum

Universities and research institutions are China's important education center and scientific research center, having strong scientific research strength. The traditional teaching form primarily gives priority to knowledge innovation due to the limitations of financial sources and the traditional thinking mode, which is measured by technicality and scientificity, selecting national planning tasks as the main

scientific research objective, ignoring achievement transformation, or don't have to consider the problem of scientific research achievements transformation. Thus they cannot have relations with enterprise actually. The new teaching mode of "industry, education and research" pays attention to practice, emphasizes the industry and product research and development, transforms the new knowledge as well as the academic and scientific research results into concrete results output and promotes the development of the industry. So "industry, education and research" mode lays more emphasis on practice, for joint participation by teachers and students to guide product development under project-based curriculum.

B. Lay Emphasis on Cultivating Innovative Animation Talent

China has become the animation production base of foreign countries, and talents have become cheap human resources of foreign merchants. "This is the pride of Chinese people, but also China's animation sorrow!"(Fang Runnan). China's colleges and universities shall be obliged to reverse this embarrassing situation. The animation graduates cultivated by traditional teaching mode need a long period of to adapt to the industry. And the animation graduates that have just graduated will inevitably face such lower work of animation processing, so China's animation industry will always be unable to get the real development. The Film-Video-Animation School of Sichuan Fine Arts Institute has established the experimental class under the talent cultivation mode reform of "industry, education and research" combination. Experimental class encourages students to actively participate in the practice of the base under the premise of having completed the basic courses and public courses, to evaluate the learning effect with performance. Students can participate in actual operation while learning to complete the simple technical requirements in advance, strengthening students' practical ability, enabling them to learn about the entire animation production process, to determine their own point of interest as soon as possible and undertake corresponding practical content for specific link training. The above traditional consciousness of attitude in terms of technology shall be transformed, to increase the animation students to the research and creation of animation as soon as possible.

IV. PROBLEMS EXISTING IN "INDUSTRY, EDUCATION AND RESEARCH" MODE

In the past two years, the number of students of Film-Video-Animation School of Sichuan Fine Arts Institute has jumped to 1047 in 2007, 736 in 2006 from 430 in 2005. Some problems have revealed in such aspects as conventional teaching organization form, teaching management, communication with students, space application, and the lack of routine teaching equipment in the process of rapid development. The cooperation between Film-Video-Animation School of Sichuan Fine Arts Institute and the base as well as the development is relatively healthy and rapid, but under the "industry, education and research" mode, there will be easily to have problems. For example, after the applied subjects are introduced in the social system directly, their

standards will be consistent with industry standards as far as possible, which will have a certain impact and influence on other original disciplines. Cannot adapt to the conventional teaching to a certain degree; teachers have different opinions and inclination in terms of cultivation objectives and the formulation of teaching plan; teaching setting and teaching syllabus are too unconventional, which are not closely related to the "industry, education and research"; part of the courses are not implemented and managed precisely or systematically; teachers' practice teaching experience is lagged behind and insufficient, which is easy to be non-standard and unadapted; the number of teachers is insufficient, in the short term, it is easy to appear the phenomenon that all the courses of certain semester are undertaken by one or two teachers. The equipment is insufficient, so it cannot guarantee that every student has a fixed location and equipment. There is gap between students' existing knowledge structure and professional level and the requirements of the base. Some students are unable to participate into the creation of animation, so they are easy to lose confidence; some students subjectively believe that the products in the industry are not art, only the products with idea, behavior, and experiment are art. As a result, there exists subjective resistance. In the case of poor preparation, we shall provide students with concept guidance and communication through investment of specialized equipment, as well as the reform of teaching organization form and teaching management in a timely manner. "Industry, education and research" mode is operated healthily in Film-Video-Animation School of Sichuan Fine Arts Institute.

V. TEACHING MECHANISM UNDER THE "INDUSTRY, EDUCATION AND RESEARCH" MODE

A. *Teaching Implementation Mechanism under the "Industry, Education and Research" Mode*

As for the freshmen, urge them to lay a good foundation, and complete the necessary learning tasks of public courses and basic courses, accumulate theoretical experience, and understand the practical consciousness; after they have reached a certain extent, actively mobilize the students enter into the base to be engaged in practical projects, and receive some fundamental and technical training, to understand the whole process of animation. At this stage, advantages of practices are reflected. Student can participate in production and bring along the majority with the minority. So, more students shall be encouraged to participate in the project of the base. As for the students with certain foundation, bring the links that may affect the production to their attention, for example, such as modeling, movement difficulty, etc. Colleges give students the possibility- in the form of performance, to make them set clear objectives, select a single stage of animation production process as their main direction, and to further strengthen it. Once the students have a clear goal, they can deepen it vertically, which is beneficial for students to make achievements in the animation industry. Arriving at the practice, teaching objectives and tasks will be changed from theory to practice, and to knowledge cognition in practice, which has effectively guarantee the implementation of knowledge points, thus student's purpose

and direction is stronger. As for the courses with longer hours and lower teaching quality in traditional teaching mode and process, they shall be merged and adjusted by taking flexible measures through the combination with industry. Some adjustments shall also be made on the course organization forms, to make cultural courses, public courses and professional courses obtain agreement with the traditional class forms. Transform the similar courses, and supplement the traditional deficiencies. After the practice form a long period of time, the time for senior class is reduced, as the graduation creation is mostly the research on works. Graduates are required to spend more time in project creation, which is different from the technical staff. Students are required to have more self creation space, strengthen the ability training, and be encouraged to form a team, to conduct the project creation with aboriginality and innovation. Students are required to have a creative mind in addition to the actual operation ability.

Of course, this experimental teaching implementation mechanism is initial stage of the trail. The negative effect generated by direct intervention into the experimental base under traditional teaching mode is faced with many pressures and problems. However, its advantage is obvious, such as equipment, teachers, practice, team cooperation, individual operation and social adaptability are strengthened, student employment is promoted, the problems of students from poor families are solved, etc.

B. *Teaching Evaluation System under "Industry, Education and Research"*

The traditional model takes students' winning number of their works in exhibition as the evaluation factor; while the ideal mode is to evaluate the teaching quality through students' quality improvement, and this kind of unquantifiable mode hasn't found a real foothold; the evaluation system under the trial mode of "industry, education and research" is combined action of double indicator, namely evaluate teachers and the management personnel from other production department together.

While requiring paying attention to students' ability, comprehensive quality and team cooperation, specific quantitative assessment shall be conducted to check students' real level, performance statistics and performance completion. Performance statistics and completion effect will be taken as evaluation standard through social recognition, broadcast situation and the development space.

C. *Teaching Guarantee System under "Industry, Education and Research" Mode*

Provide ideological guidance to students to lead them develop healthily; encourage more students to understand the intercoordination among comprehensive quality enhancement, creation awareness and specific production skills and master each production link flexibly, to make up the deficiency and gap in terms of skills and technology in simple cooperation of animation. Some students have supplemented the aimless modeling with purpose through extracurricular lessons, and they have been transformed from passive learning to active

improvement; students are required to be dedicated, and the cultivation of their team consciousness, organizational record and sense of responsibility; ask students to participate in without affecting production in the form of work-study program.

D. Problems Solved by Teaching Mechanism of "Industry, Education and Research" Mode

President Faulkner of American Austin University indicated on this year's Chinese-Foreign University Presidents Forum that "colleges should serve the local economy, and help the region to solve social problems is also the colleges' unshirkable responsibility. At the same time, colleges shall research the most important aspect in local economic development in the future. The situations are urgent and are easy to detect. They can only serve the local better by grasping the situation." The teaching mode of "industry, education and research" has effectively alleviated the deficiency of teaching equipment and space and promoted teachers ripening, reserve and introduction, which has greatly promoted college discipline construction and development scale as well as the improvement of students' experimental practice ability and employment rate. Talents will also be reserved for further development of discipline through construction of this platform. The interactive cooperation experiment of "industry, education and research" teaching mode has enabled the animation specialty results to be transformed into specific social and cultural productivity, creating economic benefits and meeting the effective combination of urgent need by Chinese animation industry and the talent cultivation and employment. Through this effort, social assessment on teaching is also introduced in to gradually realize mechanism innovation.

VI. MODEL OF ANIMATION TEACHING IN COLLEGES

The teaching implementation mechanism, teaching evaluation system and teaching guarantee system have provided an all-dimensional discipline platform for the teaching, practice, scientific research, animation creation, animation products production and market promotion of animation specialty in Sichuan Fine Arts Institution, enabling the animation discipline to achieve the talent cultivation mode reform with combination of "industry, education and research". This interactive mode has greatly improved the school-running quality of Film-Video-Animation School, becoming the model of innovative talent cultivation mode reform in Sichuan Fine Arts Institution and even the colleges in Chongqing City. In general, the example of teaching exploration of Film-Video-Animation School of Sichuan Fine Arts Institute is worthy of reference for exploration of "industry, education and research" in college animation teaching.

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