

# The Exploration and Construction of Project-based Semester Curriculum Ability Training System

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**Abstract.** This paper is to discuss the “1C+3A+6P” skill-training system which is corresponding to the project-based semester curriculum, it is studied and designed together by the colleges and enterprises based on the practice of “double-track system, innovative development” talent training mode and the construction of working process-based curriculum system reformation as well as according to the demand of innovative and skilled talents for the economic development in Guangdong province. To organize and implement each semester’s project-based curriculum by focusing on the real cases of the enterprises, to cultivate students the ability of integrating professional knowledge with practical ability, and to effectively improve the comprehensive skills and professional quality of students.

## Introduction

As the need of innovative talents and skilled personnel by modern enterprises has been continually increased with the rapid development of social economy and scientific technology, so that on, it has become a hot issue with regard to the teaching reform in vocational colleges that how to carry out the reform of the suitable talent training model and the matched curriculum system [1]. This paper takes the fashion design major of Heyuan vocational and technical institute as an example, and discusses the construction of the skill-training system corresponding to the project-based semester curriculum aiming at training skilled talents of “strong design capability, good technical and managerial ability”. Semester’s project is a learning process of work task oriented, implementing the training project as the core, and reconstructing the theoretical and practical knowledge [2]. The teaching method of semester’s project course is different from the project-based teaching of single course, it is a kind of teaching model that aiming at comprehensively training students to be talents with professional skills based on borrowing the CDIO model, creating a company practice environment for the students and letting students complete the practical training project by the use of relevant curriculum knowledge and skills in the process of “learning in practice”.

## The significance of project-based semester curriculum teaching and learning

Project-based semester curriculum is to start the implementation of the project teaching from the time when students enter the school based on the analysis of the needs of the enterprise, and to have in-depth cooperation with each other to jointly select the training projects and create a business practical environment for the students. the training projects are chosen by layer upon layer from easy to difficult; in the aspect of the project teaching, teachers and students jointly participate in the

course by the integration of theory and practice, the project course teachers begin to guide students from the first semester to increase their leading ingredients, and to mobilize students to explore the initiative of learning, to stimulate students' enthusiasm for learning, to cultivate students' self-learning, innovation and teamwork ability, so that to improve students' comprehensive vocational ability.

The project-based semester curriculum are very comprehensive courses covering a wide range of subjects, such as design, production and management, etc., Therefore, the choice of training projects must highlight the relevance between the courses, and the design of projects must be systemized around the goal of the major in order to facilitate students to master the relationship between professional curriculum knowledge and to facilitate the settlement of integrated issues. This requires instructors to have a wealth of experience in clothing enterprises and strong hands-on practical ability and extensive expertise. Colleges need to improve the teaching conditions of the school, and at the same time, pay attention to the improvement of the teaching and research ability of professional teachers, to create opportunities for professional teachers to have working practice in garment enterprises and learning at home and abroad, to encourage professional teachers to participate in domestic and foreign fashion design competitions and academic conferences, so that to construct an excellent "theory and practice integrated" teaching team.

The training project of semester project courses, on the one hand, comes from the actual production of enterprises. In order to better enable students to complete the project, the technical staffs of enterprises and the professional teachers need to jointly develop the teaching objectives, teaching plans, teaching content, training programs and quality assessment standards. On the other hand, the vocational college and enterprise must work together to develop new products, and a good R & D environment and professional teachers with a higher theoretical knowledge which need to be provided by the college must be combined with the strong economic strength and technical personnel with strong practical experience of enterprises for the research and development of new products and facilitating the college and enterprise to jointly develop new products and achieve win-win situation.

The implementation of semester project teaching is conducive to coordinating the teaching content of professional courses for students majoring in garment design, and will lay a solid foundation for the further teaching reform. The semester project curriculum is very comprehensive, involving a wide range of professional knowledge, so the relationship between the various professional courses needs to be established and developed, so that the teaching goal can be supported by more courses. The teaching design of teachers and the relation establishment between courses all should be in accordance with the implementation of the practical project of the project-based semester curriculum. In this way, the relation between the teaching content of the professional courses will be much closer by the design, and thus it will lay a solid foundation for the teaching reform of clothing major.

### **Current Situation Analysis on the Teaching of Costume Design in Higher Vocational Colleges**

The education of costume design specialty in higher vocational colleges, which is of dual attributes namely higher education and vocational education, generated from and also developed by the development of economy, the teaching goal aims at a professional position or post group [8]. In the years from 1980s to 1990s of applying knowledge, the teaching mode of costume design major in our country was suitable for the needs of the enterprises and the industry, However, the education of costume design specialty in higher vocational garment colleges and universities in our country due to starting relatively late and most of them following the teaching mode of general higher

education colleges cannot meet the training needs of cultivating students of comprehensive capability and vocational ability in the aspects of teaching concept, training objectives, curriculum provision, teaching content, teaching methods and assessment methods, etc., which has inordinately been detached with the garment industry. The education of costume design lags behind the garment industry, resulting in a large number of students who lack a sense of innovation and are short of professional ability have to face many issues when working in garment manufacturing enterprises after graduation such as they may be not clear about the garment producing process, not familiar with the manufacturing technique, and design garment that is out of the market demand and etc..

Some vocational colleges, under the guidance of curriculum reform concept, begin to change the concept of education and teaching, to learn from foreign advanced teaching methods and to positively implement the project teaching method in the professional education of costume design specialty in accordance with the personnel training target of higher vocational education and the teaching requirements of costume design major. But through the investigation, some problems as following are found in the higher vocational garment colleges that implementing the project-based teaching:

Project-based teaching is mainly applied to the teaching of a single professional course without comprehensive project-based semester curriculum. The professional costume design curriculum of many vocational colleges like costume design course, costume structure design and fashion technology course, etc., are taught to students by project-based teaching method which can improve the classroom efficiency and stimulate the learning interest of students. But the relevance among these courses is so weak that many issues occur such as the knowledge points are not systemized, the points are often repeated and so on.

The chosen "project" is not from the actual production situation in the enterprises. Although some higher vocational garment colleges have adopted the project-based teaching method in the education of costume design specialty, and formed curriculum system for talent training that are divided into 3 parts of design projects that is women's wear design, men's wear design and children's wear design which is different from the traditional costume design curriculum system, also some higher vocational garment colleges make the curriculum totalized and modularized, and develop four major projects namely fashion painting project, women, men, children's clothing design and technical projects and etc., there is a gap between these projects and the actual production situation, and the relationship between the projects is basically paralleled which cannot meet the requirements of stepwise learning from easy to difficult.

### **Characteristics and Innovation of project-based Semester Curriculum**

Since the costume design major of Heyuan polytechnic institute was established on September 2013 as a key construction major of Guangdong demonstrative higher vocational colleges construction projects, Heyuan polytechnic has begun to implement the "double-track system, innovative development" talent training model and have constructed the curriculum system based on the work process, and started to implement the "semester project throughout" practical teaching mode which matches with the knowledge system from 2014 students of costume design major, the training projects are derived from the actual production situation in enterprises or new products jointly developed by college and enterprises, each semester project will integrate all the subprojects of the entire product development process such as costume design, costume technology, garment management and so on, to research and develop products, to design the style and structure of clothing according to requirements of the enterprises and then to finish the standardized products of the enterprise, to create a real enterprise operation environment for students, so that students can

apply the learned expertise to the whole process of practice, and to effectively improve the practical skills of students.

On the basis of promoting the talent training mode of "double-track system, innovative development" and constructing the reform of curriculum system according to the work process, the enterprise and the college have jointly studied and designed the "1C + 3A + 6P" ability training system for this major by borrowing the CDIO model and learning from the project-based teaching model of the Suzhou Industrial Park Vocational and Technical College[3~7](Figure 1). 1C refers to one real case database of clothing enterprises (Clothing enterprise real case), to obtain a large number of enterprise real cases through cooperation with different garment enterprises in order to establish a comprehensive enterprise real case database; 3A refers to the three different levels of ability namely basic professional ability, core vocational ability and comprehensive vocational ability; 6P refers to corresponding to the six semester's projects (Project) that are conducive to improving the ability of students and corresponding to each project-based semester course.

"Semester project" can be divided into three levels, primary semester project corresponding to the basic professional ability, intermediate semester project corresponding to core vocational ability, senior semester project corresponding to comprehensive vocational ability. Each project is the entire development process of real products, respectively corresponding to needs of different levels of vocational abilities from low to high. to simulate the design and production process of clothing enterprises from primary design and production of clothing to intermediate and senior design of clothing and from the costume design and production of single products to the costume design of brand series products, to effectively improve the comprehensive professional ability of students.

To deepen the cooperation between colleges and enterprises, to innovate the classroom teaching forms and to improve the quality of teaching and level of double-qualified teachers. The teaching process of project-based semester curriculum for this major is implemented by a multi-teacher teaching model, professional clothing design teachers and technical staff of clothing enterprises will participate in the teaching process as part-time teachers, the two sides will jointly explore and establish the teaching programs, teaching plans, teaching progress and assessment criteria according to the project. Meanwhile, jointly guide students to actively participate in the classroom interaction. During the course of the lecture in the classroom, all questions asked by students can be resolved timely in order to stimulate students to explore the interest of learning, while promoting the mutual improvement of teachers by learning from each other. The multi-teacher teaching model not only changed the traditional teaching mode, and also changed the perception of education so that the teaching method is no more limited to the traditional teaching and is in line with the concept of higher vocational education[9].

The innovation of curriculum assessment methods and evaluation criteria. The assessment methods and evaluation criteria of project-based semester curriculum is differently developed according to different semesters, the process evaluation, stage evaluation and result evaluation is combined by such as fashion design competition, clothing show conference, ordering meeting, etc. teachers, students and enterprises together participate in the comprehensive achievement evaluation. And students can see their own achievement of every stage at any time, so that students can know about their own progress and weakness, to give full play to the performance evaluation in order to promote and guide the students to learn.

## Conclusion

The construction and implementation of ability training system corresponding to project-based semester curriculum have not only broadened the new thinking of personnel training mode reforms in higher vocational colleges and facilitated the deep integration and co-operation between colleges and enterprises, but also is beneficial to realizing the seamlessly combination between the employment of the students and the enterprises, So that teachers, students and the technical staff of enterprises can make mutual benefit and development together, and make more contribution to the society.

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