# Research and practice of multi-level project-based teaching mode -- taking the fashion and apparel design programme as an example

**Yan MA, Rubin HOU**

Academy of Arts, Taishan University, Tai'an 271000, China

**Abstract:** Introducing the multi-level project-based teaching mode into our school's fashion and apparel design major, contacting the actual clothing industry, integrating with real projects, breaking the original sub-subject teaching mode of the major, and organically integrating the related professional courses to form a project-based curriculum system by level, are the social demand of the development of the local economy and the industry, and also an effective way of highlighting the students' innovation and practical operation ability, and cultivating the high-quality applied undergraduates with engineering ability and innovation ability.

**Key words:** multi-level project mode; fashion and apparel design; integration of industry and education; applied undergraduate

## 1 Introduction

At present, industrial upgrading and economic structure adjustment are accelerating, which has led to an increasing demand for high-quality technical and skilled talents in various industries. A large number of versatile talents at all levels, from design and production to sales, are needed as the backbone of enterprise transformation and development. The current teaching mode of our school's clothing major is no longer suitable for the employment needs of enterprises.

Introducing a multi-level project-based teaching model into our school's fashion and apparel design major, linking it with the actual situation of the clothing industry and integrating it with real projects, which break the original subject-based teaching model of the major, and organically integrate related professional courses into a project-based curriculum system at different levels, are the social demand for local economic and industry development, and also highlight students' innovation and practical operation abilities and are effective ways to cultivate high-quality applied undergraduate talents with engineering and innovative abilities.

## 2 Construction of a multi-level project-based model

2.1 Construction of multi-level project-based teaching system

Guided by the collaborative education between schools and enterprises, curriculum management and research are carried out according to project grading: the architecture of the curriculum system is divided into three levels, namely level 1 basic project, level 2 support project, and level 3 comprehensive project. Guided by projects, students can develop an interest in professional courses and a comprehensive and clear understanding of the clothing industry [1].

The first level basic project is a professional foundation course, which is the teaching cornerstone of fashion design. It trains specific basic skills through a single project, achieving "learning by doing" under the guidance of the project, and enhancing students' interest in professional learning; the level 2 support project includes a set of related course groups and design ability training projects, which are divided by the status of knowledge and ability in the design process. By cultivating students' ability to apply professional knowledge through projects, it supports the level 3 comprehensive project and creates a learning environment for students to transform knowledge into abilities. Guided by the project, it strengthens communication and cooperation at various teaching stages and breaks down barriers between courses; the level 3 comprehensive project includes comprehensive design courses and job competency requirements for this major, such as clothing brand planning, graduation design, and other comprehensive practical courses. The project implementation content is based on the production process of the enterprise, emphasizing the combination of system knowledge and skills. (As shown in Fig. 1)
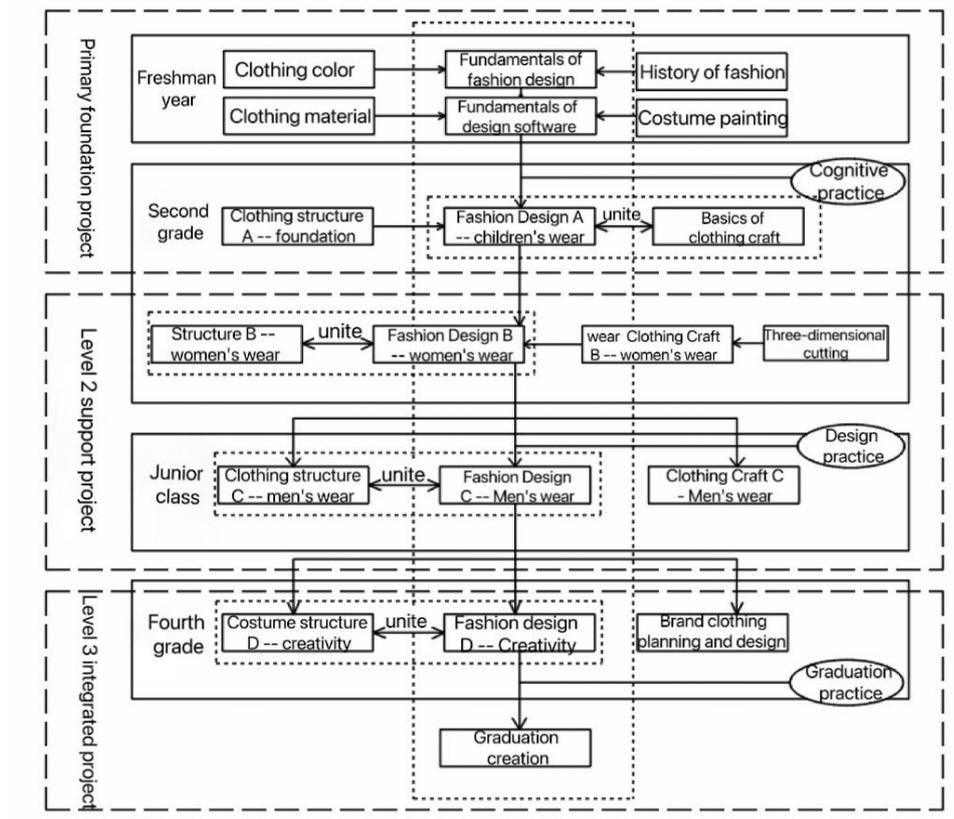


Fig. 1. Multi-level project-based curriculum system construction

2.2 Construction of a multi-level project-based model cooperation system

The establishment of an production and education integration platform and the hierarchical management of collaborative project-based teaching between schools and enterprises encourage school and enterprise teachers to jointly design teaching projects, complete teaching management and project guidance.

After the introduction of clothing product projects, the enterprise design director or design supervisor personally assigns development tasks, explains development requirements, and participates in the acceptance of the results of each stage of the course. Real professional standards and development processes are brought into the classroom, and students will have a deeper sense of project authenticity.

2.3 Construction of a multi-level project-based evaluation system

After the completion of the project course, a combination of process evaluation, stage evaluation, and outcome evaluation is adopted, and a comprehensive evaluation is conducted by combining teacher evaluation, student evaluation, and social evaluation. Process evaluation can be combined with students' "Product Development and Design Diary" (or "Clothing Design and Development Creation Record"), and the entire product development and design process can be divided into different stages, evaluated according to a certain weight; outcome-based evaluation mainly focuses on students' ability to complete design tasks and the quality of the final project tasks. Student evaluation includes evaluations among group members and evaluations between groups. (As shown in Fig. 2)
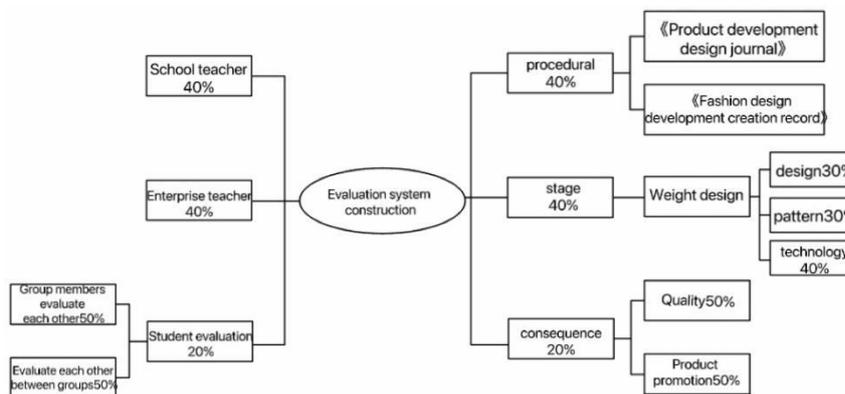


Fig. 2. Project-based course evaluation system construction

## 3 Design of the content of the multi-level project-based model

3.1 Design of multi-level project-based course content

According to the division of each level, the enterprise's new season product development project is directly embedded in the course content. According to a complete branded clothing development process and development requirements of the enterprise, the course content is designed into three modules: branded apparel planning programme production, new season product development, and branded product promotion programme design. The specific project-based course content design at each level is as follows:

Level 1 basic project: design thinking and basic programme training. It mainly teaches the basic theories of design and design methods, including the basic principles of apparel design, elements of apparel design, and integration of apparel design information. Brainstorming is implemented in practice to stimulate students' imagination, relevance and overall planning ability with mind mapping, effectively conveying thinking information and enhancing students' innovative thinking ability.

Level 2 support project: categorized clothing design and support programme training. On the basis of clothing design skills, it strengthens the design of different categories of clothing such as women's clothing, men's clothing and children's clothing, focusing on deepening the design ability and creative ability. Through market research, analysis of fashion trends, combined with skills training in materials, pattern making and craftsmanship, design ideas are combined with craftsmanship technology, so that students can have a more in-depth and concrete understanding of design and develop the engineering awareness.

Level 3 comprehensive project: clothing brand planning and comprehensive project training. Referring to the enterprise design process as the process of project implementation, comprehensive projects such as graduation design are carried out; school-enterprise collaborative counseling is carried out to expand the project, promote learning by competitions, and enhance students' innovative design ability by combining various professional competitions.

3.2 Design of project-based course periods and schedules

According to the development rules of clothing products, the new season product development of clothing enterprises is usually divided into two seasons: spring and summer, autumn and winter seasons. The preparation of design plans starts around March and September respectively, and the centralized development time is generally 2 to 3 months. Therefore, when designing project-based course schedules, schools must synchronize the course opening time with the enterprise development time. While highlighting the authenticity of the project, this is also a way to solve the time contradiction of the integration of school enterprise industry, study and research, and provides a stage basis for the segmentation and overall acceptance nodes of the project [2].

3.3 Design of project-based course organization

The organization of teaching is often one of the most important factors determining the effectiveness of course implementation. Project-based course organization is also a problem involving the scientific use of teachers and the rational mobilization of students. The design of a project-based clothing course organization can be based on the "three-point principle".

3.3.1 Project decomposition

Split the apparel product development project into sub-projects according to the three modules of the course content (planning, development, promotion), and then set the different modules into a number of tasks to promote the overall project in an orderly and task-driven form.

3.3.2 Division of labor among teachers

Due to time constraints, enterprise teachers mainly adopt a time point teaching method, which involves assigning tasks and expected goals for each stage of the project in the initial stage, providing feedback on mid-term inspections, and conducting final acceptance checks. The enterprise teachers are responsible for several nodes. While the other course time such as systematic follow-up of the sub-projects, teaching the technical skills in the process of project advancement, and organizing the students' teamwork, etc., is mainly completed by the school teachers, and the enterprise teachers can also adopt the on-line teaching mode to participate in part of the teaching. The acceptance of the tasks of each order is jointly undertaken by the teachers of the school and the enterprise. (Fig. 3)
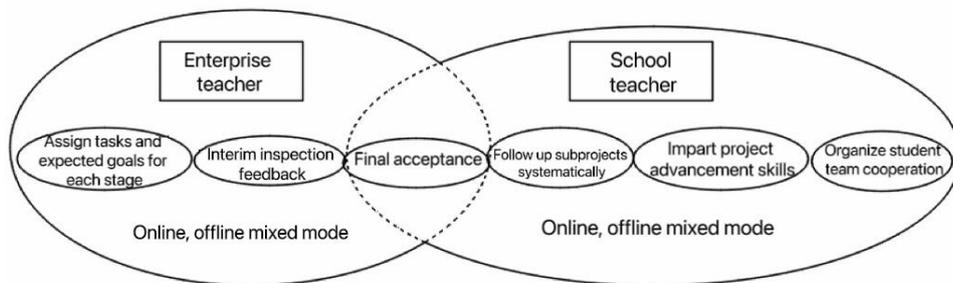


Fig. 3. Project-based course organization and teacher division of labor

3.3.3 Grouping of students

In the process of project organization and implementation, it is necessary to fully highlight the dominant position of students. Students can be divided into project teams of 3 to 4 people, and students take turns serving as team leaders and members in each sub project. They complete tasks in each stage through group discussions and division of labor cooperation.

3.4 Design of project-based follow-up courses

Compared with general higher education, applied undergraduate schools should pay more attention to the cultivation of students' practical ability, which requires more than three months of on-the-job internships during the school years. The

project-based courses can directly connect to the subsequent on-the-job internships, i.e. students who are selected by enterprises to develop products can directly enter the enterprises for the subsequent on-the-job internships.

## 4  Implications of the multi-level project-based model

### 4.1 From a school perspective

Fitting the needs of the transformation and development of applied local colleges and universities, combined with the economic characteristics of the Qilu garment industry, making full use of the advantages of the university's schooling, production, study and research are combined, which is beneficial to enhance the strength of the schooling, and to create the characteristics of local colleges and universities specialized in the cultivation of innovative, applied and excellent garment professionals.

### 4.2 From students' perspective

It shortens the distance between students' professional skills and the actual production needs of enterprises. It improves students' practical ability and innovation consciousness, which is helpful for students to jump out of the boundaries of the professional fixed thinking framework and establish the basic concept of the whole textile and garment industry chain. It also shortens the adaptation cycle of graduates from the student status to the role of enterprise employees change.

### 4.3 From the teacher's perspective

It improves the research and application of advanced technology in the garment industry by the teaching and research group. Relying on the platform of production-education fusion, we can realize the combination of production, learning and research, and constantly update the existing teaching system. It provides a platform for teachers to improve themselves and develop in the direction of "dual-teachers".

### 4.4 From a business perspective

It is a need for enterprises to feed education, give back to the society, reserve talents and expand popularity. Enterprises can use the intellectual support of universities to overcome difficulties, solve technical problems, improve enterprise management systems, undertake the transformation of achievements by university researchers, and also attract and reserve high-quality industry talents. Carrying out clothing competition naming and other activities can enhance brand awareness, establish a good reputation for the company, and seek higher economic benefits [3].

## Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

[1] Xiao JR. 2018. Reform and exploration of multi-level project-based fashion design practice teaching. *Laboratory Research and Exploration*, 6:260-263.

[2] Han TS. 2015. Design and implementation of project-based courses for higher vocational art and design. *Vocational Education Research*, 06:40-43.

[3] Hong DF, Li D. 2020. Exploration and practice of sweater design project experiment teaching based on the integration platform of production and education. *Design Education*, 11:104-106.