

## Project-driven innovation and entrepreneurship curriculum and practice research

### --Take the landscape model production as an example

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#### Abstract

**In the context of innovation and entrepreneurship, in the course of garden model making, the introduction of practical projects to improve the quality of course content, change the concept of teaching, change the form of teaching, highlight the combination of learning and innovation in the curriculum reform, highlight the combination of theory and industry in the curriculum, so that students Exercise innovative thinking, improve application and hands-on ability.**

#### Keywords

**Project-driven; building model making; applicability; curriculum construction.**

#### 1. Introduction

Through the course construction, the teaching concept, teaching content and teaching form of the "landscape Model Making" course are changed in essence, focusing on the application and practicality of the course, focusing on the relevant theories of garden model making and the close integration of process technology with industry enterprises. Integrate with the project-driven teaching model, strengthen the training of new model development and innovative thinking while cultivating students' model making skills, improve students' application ability and practical ability, and formulate detailed process evaluation methods and rules in combination with course content. Subsequent professional courses lay a solid foundation and play a driving role in the entire teaching process.

#### 2. Course status

"Garden Model Making" is a professional course for landscape architecture. The purpose of this course is to improve the three-dimensional design ability of garden students through model practice training. In the project design, landscape students convert the graphic design into a three-dimensional model according to the design needs to solve complex design problems. From the survey of the national garden professional model production curriculum, there are three main problems: (1) the connotation of model production is relatively narrow, mostly as a supplement to the design curriculum. (2) The performance of model making is single, and the model making is usually only used as an auxiliary and supplement to the design stage in landscape garden design teaching. (3) The operation of model making is simple, and most of them are mainly made by students [2]. Our school's "Garden Model Making" course has been opened for many years. There are mature model curriculum teachers. Many years of teaching has accumulated rich teaching experience and a large number of model cases. Students have shown strong interest in model courses and the course evaluation is good.

Nowadays, in the context of "mass entrepreneurship, innovation", the "Garden Model Making" course needs to continuously improve the quality of the course with the development of the times. The State Council's opinion on promoting the high-quality development of innovation and entrepreneurship to create an upgraded version of "Double Creation" requires the integration of school and enterprise, and the production, study and research to promote the development of professional courses in colleges and universities, and promote the development of students' innovation and entrepreneurship. This requires that the garden model making course needs to be

driven by the project, not only to cultivate students' garden model making skills, but also to improve the model innovation thinking training, model development, garden project application and other capabilities, and to develop garden model making courses and assessments that meet the needs of the times. The method is suitable for the needs of landscape garden students to innovate and start a business.

### 3. Project-oriented construction goals and paths

#### 3.1 Construction objectives

According to industry needs, as well as job division, analyze the professional competence required for the post, and at the same time correspond to the twelve capabilities of national engineering certification, with the main goal of garden project driving and vocational ability training, namely the overall goal of garden project construction (Table 1)[1].

Table 1 Zhaoqing College Garden Model Making Course

Teaching grade	Teaching objectives	Teaching content
First grade (model perception)	Model spatial cognition	Three-dimensional composition model basic training
Second grade (introduction to the model)	landscape model experience	Landscape Architecture Model Planning Based on Spatial Experience In-depth study of model materials
Third grade (model design)	Garden classic model learning	Landscape Architecture Planning Model Design, 3D Printing Model Research
Fourth grade (actual model)	Garden practical model project design	Landscape Architecture Model Project Practice and Graduation Design

#### 3.2 Teaching objectives

- 1) Through the combing of the knowledge and skills required by the landscape architecture profession, repeated research on the garden model production needs to focus on cultivating the students' practical ability to model the equipment, the transformation ability of the three-dimensional space, the overall control ability of the project and the hands-on model. ability.
- 2) According to the teaching objectives, the school-enterprise cooperation to develop flexible garden model production assessment methods and evaluation criteria.
- 3) Guided by industry needs, adopting school-enterprise cooperation, combining students' job requirements to train students, introducing enterprises, letting students go out, understanding the garden model market, strengthening students' ability to learn garden architecture, and grasping the performance ability of garden models. Highlight the application capabilities of the models in actual landscape projects.
- 4) Construct a garden model teaching system. In the research era, the professional appeal of gardening, combined with the current combination of gardening and practical projects, to construct a landscape garden model teaching system. Need to integrate the following resources: including syllabus, teaching courseware, teaching cases, teaching process production video.

#### 3.3 Teaching methods

- 1) Case teaching method.

In the garden model making course, the selected classic landscape design case is integrated into the course teaching, to solve the actual engineering model project as the starting point, to carry out the garden model skill training, to analyze the key points and difficulties that the case model needs to grasp, and to carry out key training. In this way, the comprehensive ability of students to solve practical problems, such as the Zhaoqing City Innovation and Entrepreneurship Center model case (figure), needs to focus on the environment creation of the innovation and entrepreneurship center, and the difficulty in integrating the old and new buildings, etc., through these to train students to solve The ability to actually problem.

2) Project teaching method

In the garden model teaching, the completed project is introduced into the model teaching. Through the analysis, explanation, production of relevant theoretical knowledge and skill training of the actual project, learn to do the project, and use the project method to solve the problem of the ordinary garden model course learning.

3) Demonstration teaching method.

The demonstration teaching method is to bring the garden production model classroom into the enterprise, let the enterprise tutor explain the garden model production case on the spot, and let the students deeply understand the process of model making through the actual demonstration case.

**4. Project-oriented "landscape Model Making" Course Construction Measures**

**4.1 Optimize course content**

According to the needs of the society and the ability of the post, the landscape garden professional combines the post-oriented and local needs training mode, analyzes the social post needs and the corresponding post ability, determines the professional curriculum according to the post-capacity training, and then determines the teaching of the professional curriculum. content.

1) Focus on strengthening the operation process of the experimental equipment required for the production of the training model, ensuring the standardization and safety of the operation process, and cultivating students' ability to operate and operate the equipment.

2) Familiar with the model making materials in the early stage of the course, apply a single material to carry out creative training of 3D space models, and cultivate students' ability to transform in 3D space.

3) Introduce real projects into the classroom, and organize them from a series of procedures, such as project introduction, project data collection, project plan analysis, market material research, model preparation material preparation, model base design and production, model making, and lighting design. Design classrooms to develop students' ability to comprehensively control the project, actual hands-on ability, ability to judge the value of project results, and teamwork ability.

4) Follow the teaching ideas of "focus on foundation, outstanding ability, pursuit of innovation, development and application", optimize the content of the course, and completely break the original teaching content logic in the course syllabus, and realize the project penetration while training skills ( Fig 2).

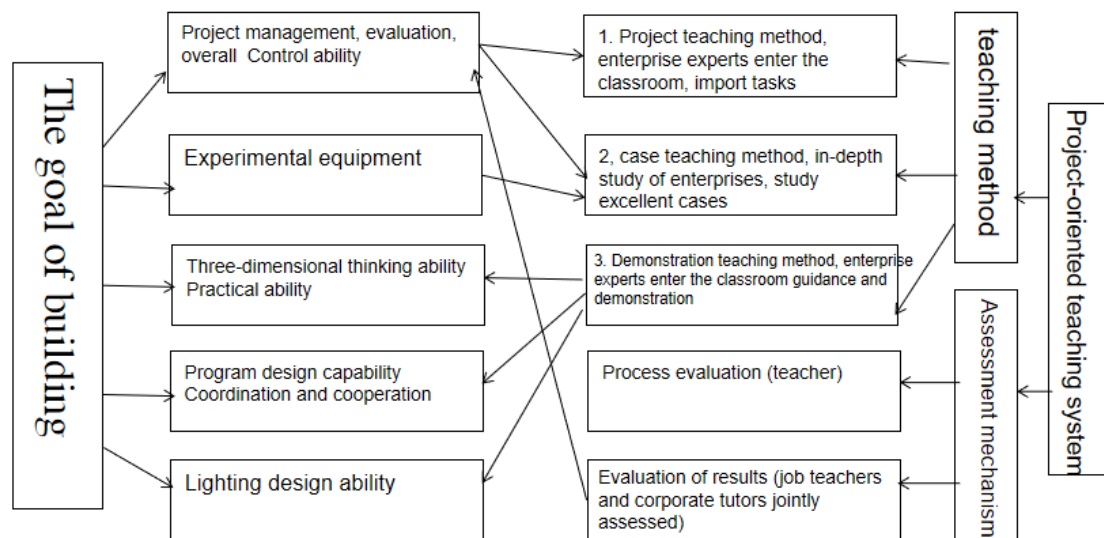


Fig2.diagram of teaching methods and evaluation

## 5. Assessment and evaluation system construction

- 1) Evaluation in the course. Strict control over the course process will help to achieve good results later. According to the syllabus, the project content and the performance of the production process are included in the final grade of the course, accounting for 30%-40%. It helps students not only pay attention to the results, but also pay attention to the learning process and train students to solve problems in the actual project process. The ability to ultimately reflect the core values of the course.
- 2) Evaluation of the end of the course. According to the final evaluation criteria of the course, combined with the acceptance conditions of the enterprise project, the school and enterprise jointly develop the final evaluation system, and comprehensively evaluate the practicality, innovation and aesthetics of the final model results.
- 3) Evaluation of innovation results. In the course of the model course teaching, if the students actively engage in various thematic competitions related to the course, and apply the model results to declare various patents, etc., the final grades of the model courses will be counted according to the success grades (Fig 3).



Fig 3 .Zhaoqing City Innovation and Entrepreneurship Center Model

## 6. Conclusion

By studying the application characteristics of the "Garden Model Making" course, linking the needs of the garden model to the enterprise, strengthening the applied training of the curriculum, optimizing the teaching content, importing the garden model to make actual cases, working with the model company to complete the actual project, and exploring the garden model making. New materials and new techniques strive to build an applied teaching model and a practical teaching model that adapt to the new curriculum, new situation, and new concept, so as to effectively improve students' ability to adapt to society and highlight professional innovation in the process of implementing teaching strategies. Through the training of project-oriented teaching mode, the design is "integrated from thinking and fragmentation", "planarization of design thinking" to "three-dimensional design thinking", and radical transformation to promote students' all-round development and implement the scientific development concept. The core concept of "professional development" and "student development-oriented". Through the construction of this new teaching form and teaching content, teachers can also develop the ability to effectively integrate teaching resources and improve the professional teaching level of dual-teachers.

## References

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