

# Exploration on Teaching Reform of "Cuisine Styling Craft" Course under the Concept of New Engineering

Wei RAN\*

College of Culinary and Food Science Engineering, Sichuan Tourism University, Chengdu 610106, China

**Abstract** As an important professional course of culinary majors, the reform of teaching contents and methods is of great significance to stimulating students' creativity and enhancing their engineering practice ability. Based on the concept of engineering education, this paper explored the integration of engineering thinking into traditional cooking teaching, in order to cultivate students' innovative thinking and practical ability, and a teaching mode reform scheme of "theory-practice-innovation" was put forward. This study put forward a set of systematic curriculum reform scheme and preliminarily evaluated its implementation effect by introducing engineering thinking, modern technology and interdisciplinary knowledge.

**Key words** Cuisine design; Engineering education; Teaching reform; Practical innovation

**DOI:**10.19759/j.cnki.2164-4993.2025.04.011

In the fierce market environment of catering industry, various dishes are constantly innovating in appearance, attracting diners' attention and stimulating their appetite<sup>[1]</sup>. With the rapid development of catering industry and the increasing demand for cooking talents, the styling craft of dishes is not only related to aesthetics, but also to the texture, nutrition and food safety of food<sup>[2]</sup>. In catering service, the cooking of dishes should not only consider the aesthetic appearance, but also ensure the color, flavor and taste<sup>[2]</sup>. "Cuisine Styling Craft" is a core required course of culinary specialty, and the method of combining theory with practice is emphasized during teaching, aiming at enabling students to master the general knowledge of cuisine design and to use these principles to guide cooking practice. Traditional teaching of "Cuisine Styling Craft" often focuses on skill teaching, but lacks the cultivation of systematic thinking and innovative ability, which limits the cultivation of students' innovative thinking and the ability to solve complex problems to some extent. Introducing engineering concepts into the course of "Cuisine Styling Craft" means combining food science, engineering principles, modern techniques and cooking skills and combining theory with practice to cultivate students' systematic thinking, innovative design ability and engineering practice ability. It can not only improve students' professional skills, but also enhance their ability to solve practical problems and lay a solid foundation for students' future career development. Therefore, introducing the concept of engineering education into the teaching of "Cuisine Styling Craft" is not only an innovation of the traditional teaching mode, but also an important exploration of the education mode of food science.

## Current Situation of "Cuisine Styling Craft" Course

### Problems existing in current teaching

At present, the teaching content system of the "Cuisine Styling Craft" course is not systematic enough. Cuisine styling craft integrates knowledge from various disciplines such as literature, painting, craftsmanship, psychology, color science, nutrition hygiene and cooking techniques. This interdisciplinary nature may lead to too extensive teaching content and lack of pertinence and depth, which makes it difficult for students to establish an effective connection between theoretical study and practical application. The teaching content of this course includes basic principles, rules and methods of cuisine styling, as well as the skills of dish up and decoration. Although these contents are comprehensive, the absence of systematic integration in the teaching process makes it difficult for students to form a complete knowledge system. The contents of the course often focus on traditional cooking skills and aesthetic principles, but lack attempts to integrate modern engineering concepts into teaching.

Most courses are still taught by traditional methods of explanation and picture display, and the absence of interactive and innovative teaching methods, such as multimedia teaching, project teaching, task-driven learning and cooperative group learning, may limit students' in-depth understanding and application of knowledge. Moreover, the practical teaching of the course is limited to traditional cooking operations and fails to introduce modern food processing techniques and equipment, which greatly limits students' understanding and application of modern food engineering practice. Students will lack practical opportunities to solve engineering problems, and it will be difficult for them to develop engineering mindset. Engineering thinking encourages innovation and optimization, while traditional teaching may put too much emphasis on imitation and replication and fail to stimulate students' innovative thinking. At present, this course lacks the content which guides student in innovative design and craftsmanship improvement.

### Necessity of reform

With the rapid development of the catering industry, the

Received: October 26, 2024      Accepted: January 10, 2025

Wei RAN (1987 – ), male, P. R. China, Associate professor, devoted to research about food processing.

\* Corresponding author.

demand for professionals in cooking techniques and nutrition is constantly changing, and the demand for technical talents in the industry is getting higher and higher. Therefore, the reform of the "Cuisine Styling Craft" course needs to keep up with the development of the industry, update the teaching content and introduce enterprise techniques, enterprise standards and enterprise culture, so as to meet the needs of enterprises and students. The traditional teaching mode has been unable to fully meet the demand of innovative talents in modern food industry.

## Reform Ideas and Plans

### Innovation of teaching concept

The concept of engineering education emphasizes innovating education mode and promoting the sustainable development ability of future engineers. Introducing the concept of engineering education into the course of "Cuisine Styling Crafts" means not only teaching traditional cooking skills, but also integrating the cultivation of systematic thinking, technological innovation ability and teamwork spirit, so that students can become engineers who can both "manufacture" and "discover"<sup>[4]</sup>. Integrating the concept of engineering education into the teaching process of the "Cuisine Styling Craft" course can effectively solve the problems of low integrating degree between course standards and talent cultivation plans, as well as the disconnect between theoretical knowledge and practical skills.

Knowledge from various disciplines such as literature, painting, craftsmanship, psychology, color science, nutrition and hygiene and cooking techniques can be integrated into the course of culinary arts and crafts. Such interdisciplinary integration helps students to understand and master the cuisine styling craft from different perspectives and cultivate their systematic thinking ability. It is necessary to combine practice with theory, and through the "integrated theory and practice" teaching, students can understand theoretical knowledge in practical operation and improve their ability to solve practical problems. Such a teaching method helps students to form a systematic mindset and apply theoretical knowledge to practice.

The course reform emphasizes the innovation of teaching methods based on innovation and entrepreneurship education, and adopts various teaching methods such as case, discussion, heuristic and debate-based methods to achieve the purposes of stimulating students' innovative consciousness, cultivating students' independent inquiry ability, and improving students' practical ability, innovative consciousness and professional practical application ability, so as to improve the quality of personnel training. Through practical teaching, students can form innovative consciousness and exercise innovative and entrepreneurial ability in project practice, which is of great significance to their future career development.

### Reconstruction of course system

**Theory** The reconstructed course system emphasizes the teaching reform of basic styling theory, aiming at strengthening students' basic theories and skills, and establishing the overall goal of talent training by clarifying the teaching objectives, grasping the laws, and tamping the cornerstone of innovative talents. The reform of process design method focuses on two aspects: changing classroom

teaching concept and updating classroom teaching content. The teaching reform of the "Cuisine Styling Craft" course advocates changing traditional education thinking, and combining aesthetics with modeling skills to form a teaching mode of aesthetics first and skills following up. It requires students to develop association based on the basic elements of styling and establish connection with traditional culture, forming a form with Chinese traditional cultural meaning. In addition, food safety control also occupies an important position in the reconstruction of the curriculum system. Through study of the course, students can discuss the importance of quality and safety control and environmental protection to the sustainable development of the food industry, deepening the core socialist values. The curriculum reform also includes improving students' comprehensive description ability of food safety influencing factors and quality management system, as well as their ability to analyze the key quality and safety control points of food production process using the basic principles of food hazard analysis.

**Practice** The reconstruction of curriculum system emphasizes the importance of training basic skills, aiming at enabling students to master basic knowledge and skills necessary for dish design and production. Through modular teaching activities, students can get basic knowledge and skills such as cold dishes and food carving, and students' professional spirit of loving their jobs and working hard can be cultivated. In terms of process design, the reconstruction of curriculum system pays attention to organically integrating the theoretical knowledge, professional skills and professionalism required by professional posts into set modules and teaching units. Based on the analysis table of "work task and professional ability", the course design idea focuses on the key ability of dish design, reflects the production demand of enterprise posts, and embodies the principles of scientificity, cutting edge and applicability of the course. The reconstruction of curriculum system encourages the implementation of innovative programs, and enables students to master basic skills such as seasoning and cooking through project training. In addition, the course also emphasizes reforming and innovating cooking techniques, being close to the market, and taking the road of "alternating work and study". It focuses on the development of students' career, and strives to cultivate students' interest in cooking work. In the practice of quality control, the reconstruction of curriculum system pays attention to the cultivation of students' ability in information collection and analysis, independent work, autonomous learning, hands-on operation, teamwork, communication, organization and management, art appreciation and innovative thinking.

**Innovation** The reconstruction of curriculum system emphasizes the importance of creative design training, aiming at stimulating students' innovative thinking and design ability. Through the projects including "learning to cook traditional dishes-imitating new dishes" and "looking for new raw materials-skillfully matching with clever tricks", students can learn how to break through traditional cooking methods and carry out innovative design. These projects encourage students to analyze and expound the breakthrough of traditional dishes, the change of raw materials, the innovation of sauces and the design of shapes, so as to broaden their thinking and stimulate creativity. The development of new

techniques is another key point of curriculum system reconstruction. The course can help students to understand the characteristics of cooking techniques, capture the changes of cooking techniques and apply them to actual cooking through tasks such as "diversified cooking methods and skillful renovation of dishes". The reconstruction of curriculum system also includes case analysis and discussion to improve students' practical application ability. Through activities such as "dish design and making", students can analyze different dish design skills, deepen their understanding of design ideas, and strengthen their practical ability. For example, the activity "breakthrough and design of traditional dishes" allows students to explore how to innovate traditional dishes. In addition, the practice of work display and evaluation is an indispensable part in the reconstruction of curriculum system, aiming at improving students' practical operation and evaluation ability. Through the "exhibition of works" link, students can show their learning achievements and receive evaluation. Such practice helps students apply theoretical knowledge to practical operation, and improves their professional skills and innovation ability through exhibition and evaluation of works.

### **Reform of teaching methods**

**Project teaching** The reform emphasizes the use of actual combat projects as the teaching carrier, and enables students to learn and master the knowledge and skills of cuisine styling craft in practical operation through project-oriented and task-driven methods. Such teaching mode can fully mobilize students' learning enthusiasm and cultivate their learning interest and practical operation ability. In the reconstruction of curriculum system, we should emphasize the importance of group cooperation. Students are divided into groups, each of which undertakes a task, and team members work together to complete the project. This teaching method can well cultivate students' team spirit and communication ability. In specific teaching practice, such as the final joint report of cooking craft and nutrition majors, students are divided into several groups to present the product design, and graded through self-evaluation and mutual evaluation, which not only exercises students' teamwork ability, but also improves their organizational and practical ability. The reform encourages students to display and communicate their achievements after completing projects. Such exhibition not only includes PPT production and content explanation, but also involves many dimensions such as formula rationality, practicality and innovation of product design. In this way, students can learn from each other, inspire each other and improve their innovative thinking and expression ability. The display and exchange of achievements is also a part of teaching evaluation, which strengthens the evaluation of students' learning effect and promotes students' all-round promotion and personality development.

**Digitalized teaching** In the course, multimedia teaching software is used to show cooking techniques and the process of dish making through words, pictures, audios and videos, so that students can better understand and master knowledge. In the implementation of teaching, we should pay attention to the use of objects or pictures related to the teaching contents, and we can also use digital resources such as multimedia courseware to optimize classroom

teaching, strengthen the intuition of teaching and improve students' learning ability<sup>[5]</sup>. By use of online teaching platforms, such as Superstar Learning Platform, to obtain more high-quality teaching resources and cases and to provide learning resources of cooking knowledge, communication platform and online answering questions, students can study at any time and any place<sup>[6]</sup>.

**Discussion-based teaching** The teaching method of case analysis is integrated into the course. Through case analysis and appreciation of excellent works on specific dishes, students can learn relevant knowledge and skills. Such teaching method helps students to understand the application of theoretical knowledge in practice and improve their ability to analyze and solve problems. The course emphasizes the importance of group cooperative learning. Students discuss in groups, agree on topics, discuss menus and arrange work tasks. This type of group discussion can cultivate students' teamwork and communication skills. In the implementation of teaching, students can learn relevant knowledge and skills through different forms such as group discussion, teacher demonstration, student training, work display and comment. It not only enhances students' sense of participation, but also improves their practical operation ability. The course encourages students to share their experiences after completion of projects. For example, in the process of making banquet design books, work plans and menus, students have the opportunity to show their learning achievements, and simultaneously consolidate their knowledge and exercise their oral expression and communication skills. Students can learn from each other, inspire each other and improve their innovative thinking and expression ability, through the teaching method of displaying and evaluating students' works. This way of experience sharing helps students learn from their peers and promotes the internalization and application of knowledge.

## **Implementation Effect and Evaluation**

### **Improvement of teaching effect**

The curriculum reform emphasizes the use of actual combat projects as the teaching carrier, and enables students to learn and master the knowledge and skills of cuisine styling craft in practical operation through project-oriented and task-driven methods. This teaching mode can fully mobilize students' learning enthusiasm and cultivate their learning interest and practical operation ability. Through practical operation, students have a deeper grasp of theoretical knowledge, so that when students encounter the same problems in their future work, they will know how to operate and what is the basis of operation. The curriculum reform focuses on cultivating students' innovative consciousness and ability. Through case analysis and analysis of the current situation of the industry and market, we can broaden students' creative thinking breadth, stimulate students' interest and cultivate their innovative thinking ability. Through the completion of tasks at each stage, students can systematically build an integrated framework system of food professional knowledge with new product production as the carrier in limited practical teaching. With an open and exploratory practical teaching design idea, students' interest can be stimulated in inquiry learning through problems under the guidance and leading by teachers, and carry out targeted creative thinking training and

innovative ability training. The curriculum reform not only improves students' practical ability, but also enhances students' aesthetic ability and innovation ability. Through targeted training in color, pattern and dish styling, students' artistic culture, aesthetic ability and innovation ability are improved, and their professional ability and comprehensive quality are also improved. Through the analysis of curriculum feedback questionnaire, it is found that students are satisfied with the course overall, and agree with the sense of accomplishment brought by the independent creative development and design of new products and the completion of new products. They also think that their teamwork ability, practical operation, curriculum knowledge integration and application, innovative design and office software application have been greatly improved, and their learning effect has been significantly improved.

### Analysis on students' feedback

Through the creation of situational teaching environment, the curriculum reform increases the communication and discussion between teachers and students, gives more respect and care to students' independent learning and innovative consciousness, and greatly enhances students' learning enthusiasm and motivation. In the teaching process, students are required to find information and discuss the history of food processing and the influence of food processing technologies on society and people's lives, while focusing on cultivating students' professional interests, professional beliefs and the lofty goal of engineer spirit, enhancing their sense of identity and responsibility for serving the country with food technology, and establishing correct core socialist values. The curriculum reform lays emphasis on understanding relevant policies of the party and the state in daily life, and integrates the national requirements of integrating whole-process education and all-round education into the teaching process under the guidance of strengthening moral education and cultivating people. In the process of teaching, we should construct a curriculum ideological and political system to promote classroom teaching reform and guide students to establish correct scientific concepts, so as to cultivate students' sense of historical responsibility and mission to benefit mankind and serve society and stimulate their patriotic sentiments. Letting students design the processing techniques with their hometown food as raw materials can not only cultivate students' attention to the development of hometown industry, but also attach importance to students' ability to solve problems, and enhance their sense of identity and responsibility for serving the country with food science and technology. In the curriculum reform, by analyzing typical tasks, summarizing action fields, changing learning fields, and decomposing learning fields into specific teaching projects according to the complete thinking and professional characteristics of project contents, we focus on cultivating students' professional ability, incorporating vocational and technical qualification assessment into teaching, strengthening practical training and social practice of internship classes, broadening students' horizons and improving their employment strength.

### Existing problems and suggestions for improvement

In the course reform, the development and utilization of modern information technologies such as multimedia courseware and audio-visual films have been mentioned, as well as the full use of network resources such as electronic books, electronic periodicals, digital libraries and websites, to expand students' knowledge horizons. In the reform, it also has been mentioned to establish a teaching evaluation system with professional qualification standards as the goal, emphasizing the combination of process evaluation and result assessment. It includes regular homework exercises, the completion effect of classroom projects and the final assessment. The continuous improvement of the evaluation system is conducive to a more comprehensive examination of students' vocational skills and practical ability, and it also needs constant adjustment and optimization to adapt to the development of the industry and the changes in teaching needs. The importance of school-enterprise cooperation is emphasized in the curriculum reform, and it has been put forward that industry-university cooperation should be conducted to develop training curriculum resources and make full use of training places and various types of training bases. These measures show the core position of school-enterprise cooperation in the curriculum reform, and they also point out the need to further deepen the cooperation, in order to achieve resource sharing and complementary advantages and improve students' practical ability and employment competitiveness.

### Conclusions and Prospects

In this study, the concept of engineering education was introduced into the teaching of cuisine styling craft course, and a new teaching mode has been constructed and achieved good results. In the future, we will further improve the teaching system, deepen the teaching reform, and provide new ideas for the cultivation of culinary professionals.

### References

- [1] WANG K. The expression of cooking aesthetics in Chinese hot dishes [J]. *Modern Food*, 2023, 29(19): 60–62. (in Chinese).
- [2] YAO YM. Research on the application of color and styling expression art in Chinese cooking[C]//Guangdong Association of Teachers' Continuing Education. Proceedings of the seminar on "integration of education and innovation" organized by Guangdong Association of Teachers' Continuing Education (Part 3). Langfang Technician School, 2023. (in Chinese).
- [3] ZHANG QY. Study on food carving techniques in cooking[J]. *China Food*, 2024(20): 154–156.
- [4] MOU C, LI W, XU ZY. Teaching reform path of Chinese cuisine specialty in Sichuan – Chongqing higher vocational college from the perspective of cultural and creative industry[J]. *China Food Industry*, 2024(17): 166–169.
- [5] LI ZF. Study on the strategy of inheritance and innovation of dietary culture in cooking teaching reform[J]. *China Food Industry*, 2024(14): 103–105.
- [6] WANG JJ. Exploration on the application of virtual simulation cooking operating system in western cuisine teaching in vocational schools[J]. *Modern Food*, 2024, 30(12): 34–36.