Research on the Reform of Experimental Teaching of Food Technology

Sun Wei, Xu Wei, Wang Xuedong, Yi Yang, Hu Qiulin

School of Food Science and Engineering, Wuhan Polytechnic University, Wuhan Hubei, 430023

Abstract: With the continuous development of society, the employment situation of college students is becoming more and more severe. Under such a social background, higher requirements are put forward for the comprehensive quality and innovation ability of college students. In the new period, how to effectively cultivate the innovative spirit of college students and improve the comprehensive quality of college students is an important problem that colleges and universities face and need to solve, that is to say, colleges and universities also have higher requirements in talent training. Food science and engineering is an important major in colleges and universities, among which food technology is the most important course. The course has obvious comprehensive and practical characteristics, but because of the influence of the traditional educational concept, the experimental teaching of food technology has been in a disadvantaged position, which can not meet the needs of the cultivation of talent quality and innovation ability in the new period. Therefore, it is imperative to strengthen the reform. This paper mainly analyzes the experimental teaching reform of food technology.

Keywords: Food Technology; Experimental Teaching Reform; Research

Food technology is an important practical course in food science and engineering in colleges and universities. It is an important way to improve students' professional practical ability, and also plays

---

<https://doi.org/10.47852/bonviewCETR2020010216>

This is an open access article published by the BON VIEW PUBLISHING PTE. under the Creative Commons Attributions License.

an important role in the development of students' innovation and entrepreneurial ability. Experimental teaching is the key link in the teaching of food technology, but from the overall teaching situation, experimental teaching is still in a weak position in the teaching of the whole course, experimental teaching is only regarded as a means of auxiliary teaching. This not only violates the essence of experimental teaching, but also affects the improvement of students' practical ability and innovation ability, which is also very unfavorable to the employment of students after graduation. Therefore, it is very necessary to analyze the current situation of food technology experimental teaching, and put forward effective reform countermeasures to improve the level of experimental teaching and improve the comprehensive quality of students.

I. Importance of experimental teaching reform in food technology

The position and importance of food technology in the field of food science and engineering in colleges and universities is self-evident. This course has a strong practicality, and it is this characteristic that also determines the importance of experimental teaching in this course. Experimental teaching is the key teaching link in food technology. It can not only help students to strengthen their understanding and consolidation of theoretical knowledge, but also play an important role in the development and cultivation of students' practical ability and scientific research ability. At the same time, it is also the key path to improve students' professional skills and innovation ability, which plays an important role in the development of students' comprehensive quality^[1]. However, there are still some problems in the experimental teaching of food technology, most teachers are still using the traditional experimental teaching method, that is, let the students carry out the experiment completely according to the guidance of the teacher. Students can only carry out experiments step by step, lack of thinking and exploration, not only inconsistent with the original intention of experimental teaching, but also affect students' experimental enthusiasm, but also difficult to promote the development of students' innovative ability and thinking ability. Even college students and social development will appear disjointed situation. And after the arrival of the new era, there are obviously higher requirements for the innovative ability and comprehensive quality of talents. Under this situation, it is more necessary to reform the experimental teaching of food technology and do a good job in the reform of experimental teaching. It can not only better meet the needs of social development for talents, but also promote the reform and innovation of food technology, which is of great significance to the development of students' observation ability, thinking ability, experimental ability and innovation ability.

II. Current Situation of Experimental Teaching in Food Technology

The investigation shows that there are still some problems in the experimental teaching of food technology in colleges and universities at present, which leads to the difficulty of showing the value of experimental teaching effectively, and also brings some influence to the students' learning and the improvement of their comprehensive quality. After investigation and analysis, there are some problems in the experimental teaching of food technology:

A. Insufficient attention by teachers

Teachers' lack of attention to experimental teaching is an important problem in the experimental teaching of food technology. As the organizer and guide of the whole experimental teaching, teachers' lack of attention is not enough, which will inevitably affect the effective development of the whole experimental teaching. Teachers' lack of attention to experimental teaching can be analyzed from the following contents: First, teachers lack the effective management of the discipline and order of the experimental teaching curriculum, and there is a great deal of randomness in the organization of the experimental curriculum, which leads to the confusion of the teaching order in the classroom, and the effectiveness of the experimental teaching is greatly affected; second, the lack of objective assessment of students' performance and the lack of careful observation of students' specific performance; third, the lack of in-depth study of theory, often pay more attention to imparting operational skills to students in experimental teaching, leading to students' lack of understanding of theoretical knowledge, lack of theoretical support, and difficulty in solving problems in the experiment for students; Fourth, teachers' factory practice experience is not enough to create a vivid experimental atmosphere for students^[2].

B. The content of the experiment is old

In experimental teaching, due to the limitation of equipment and experimental time, most colleges and universities have some backward disadvantages in the equipment of experimental teaching content, and do not show local characteristics. In the specific experiment, most colleges and universities only set up the production of bread, canned food, tofu, salted eggs and other videos in the content of the experiment. It does not involve dairy products, fruit and vegetable preserves and other foods, and experiments often use traditional manual methods, coupled with excessive attention to food production, ignoring the final quality of the product testing, resulting in students' theoretical knowledge and practice is very different. It is not only unable to arouse students' subjective initiative in learning, but also unfavorable to the development of students' comprehensive quality, which is also inconsistent with the demand for talents in social development.

C. Lack of comprehensive and designed experiments

At present, in the experimental teaching of food technology, too much attention has been paid to the verification experiment, that is, to the content and process of the textbook, to the verification

of the content of the textbook, and not to the development of new products. This is unfavorable to the cultivation of students' innovative ability, and it is difficult to meet the needs of enterprises and units in the new period, and will also have a great impact on the employment of students.

D. Single assessment method

The result of experiment teaching of food craft science is mainly composed of two parts, that is, examination result and peacetime result, the way of examination has always been the examination of paper surface, and the usual result includes attendance, experimental performance and so on. However, this kind of examination method is very single in the new development period, which can not really test the students' practical ability, nor can it guide the students' weak links effectively. It is very unfavorable to students' study and future development.

E. The laboratory is not open enough and the students' initiative is not high

The new period also has the higher ability to the talented person's independent study ability, in the food craft science experiment teaching, also should give full play to the student's initiative. But because of the nature of certain conditions, the openness of the laboratory is not high enough, and the innovation of experimental teaching is not high, students can only operate according to the outline. In this case, the active participation of students is also affected to some extent^[3].

III. Effective Strategies for the Reform of Experimental Teaching in Food Technology

A. Assign experimental teachers to ensure that the art industry specializes

As we all know, experimental teaching in food technology is an important way to cultivate students' practical ability and innovative ability. In most colleges and universities, this part is basically divided into 60 hours, a total of 15 experimental projects. Moreover, in the traditional experimental teaching, it is often carried out by a teacher from beginning to end, which not only adds great pressure to the teacher, but also can not guarantee the effect of experimental teaching. So in the new era, teachers can be reasonably assigned according to the content of experimental teaching, the experiments can be classified and taught by different teachers. The assignment of experimental teaching tasks according to teachers' specialties can not only guarantee the effect of experimental teaching, but also improve the effect of experimental teaching.

B. Optimizing the content of experimental teaching

In the traditional experiment teaching of food craft science, the teaching content is old and backward. Therefore, in the process of experimental teaching reform, it is necessary to improve and optimize the teaching content, that is, to adjust and optimize the experimental content reasonably in combination with the needs of the development of the times. That is to say, we should actively practice

stratified experimental teaching. First of all, in the verification experiment teaching, the content of the experiment should be increased; Secondly, in the comprehensive experimental teaching, to verify the experimental products as the basic object, physical and chemical in-depth means to in-depth analysis and exploration of food process conditions, and product storage, quality testing and product shelf life testing, improve the experimental process; Finally, in the design experiment teaching, we should give full play to the students' autonomy and guide the students to carry out experiments in combination with the of their hometown, which can not only stimulate the students' interest in the experiment, but also expand the students' knowledge. It also plays an important role in the main role of students^[4].

C. Strengthening the Application of Multimedia Teaching in Experimental Teaching

In fact, in the experimental teaching of food technology, some contents can not be realized by experiments. In order to help students better understand this part of the knowledge, we can use multimedia technology to achieve, multimedia technology and experimental teaching combined to make up for the shortcomings of traditional experimental teaching. The content that can not be tested is made into multimedia courseware, such as automatic aseptic filling of soft drinks, which can be displayed by multimedia. In this way, it can not only show more advanced technology to students, but also effectively help students to learn enthusiasm, help students to master relevant knowledge accurately, but also break through the key points and difficulties. Make complex knowledge more simple^[5].

D. Improving assessment

The examination of experimental teaching is also comprehensive, including theory, practice, thinking, skills and so on. Therefore, it is very important to establish a perfect examination system. The emphasis of the examination should be on the students' practical skills, to change the traditional single evaluation and assessment methods, and to assess and reflect the students' experimental results in a more objective way. To provide an important guarantee for the improvement of students' comprehensive quality. At the same time, we should do a good job in the management of the laboratory, construct an open laboratory, and open the laboratory to the students to give full play to the students' autonomy and promote the students' ability of scientific research, so that the students' autonomous learning and inquiry ability can be effectively trained and improved^[6].

Conclusion

To sum up, food technology is a key course in college education. The remarkable feature of this course is that it is comprehensive and practical, which has high requirements for students' practical ability and operation ability, and is also an important way to exercise and improve students' operation ability. But the traditional experimental teaching inevitably has certain lag problem, so this needs to

carry on the reform and the innovation to the experimental teaching, from the teacher assignment, the teaching content, the teaching method, the examination and so on angle carries on the improvement and the innovation to the experimental teaching. To improve the whole experimental teaching, so as to improve the effectiveness of experimental teaching, to provide an important guarantee for the development of students' practical ability and comprehensive quality, so as to train more talents in food processing for social development.

Acknowledgement

This work is supported in part by International cooperative education and education reform program for International Students of Wuhan Polytechnic University, 2020 (XG2020004) A Study on the Teaching Reform of Food Technology / for international Engineering Education Certification

References

- [1] Li Xuehui. Analysis on the Reform and Effect of Experimental Teaching of Food Process Design [J.] in China Modern Vocational Education ,2018,(1):54-54.
- [2] Guo Yuxing, Su Mi, Xiong Binyi, et al. Preliminary Study on the Reform of "Food Technology" Experimental Teaching —— Taking the Department of Food Science and Nutrition of Nanjing normal University [J.] as an example Processing of agricultural products ,2018,(11):75-77.
- [3] Guo Weiyun, Yu Xiaona, Cheng Ming, et al. J]. on the Teaching Reform and Practice of Practical Training in Food Technology under the Background of Transformation and Development Journal of Xuchang University ,2018(8):81-83.
- [4] Li Huanhuan, Wu Jinju, Fan Wenying, et al. Exploration on Teaching Reform of "Food Technology Experiment" under the J]. of Engineering Education Specialty Certification Agricultural products processing ,2020, No.498(4):108-110.
- [5] Liu Qi, Li Run, Jiang Liwen, et al. A Brief Discussion on the Curriculum Reform of "Food Technology" in Food Quality and Safety Specialty [J.] of China Agricultural Processing, No.462(16):92-94.,2018
- [6] Ren Dandan, he Yunhai, Wang Qiukuan, et al.[J].on the Reform and Practice of Food Technology Course Education and Teaching Forum, No.368(26)113-114.,2018