

# Exploration and Practice of Ideological and Political Teaching of "Food Analysis and Inspection" Course in Applied Undergraduate College

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**Abstract:** "Food Analysis and Inspection" is the core course of food majors and an important means to train food majors to master food quality inspection and evaluation. Under the background of the transformation of local application-oriented colleges and universities, this paper makes full use of the moral education function contained in the process of food analysis and inspection, refines the ideological and political education involved in professional courses, and makes it concrete and vivid in the teaching of professional courses, good teaching effect.

**Keywords:** education; teaching; food; ideological education; curriculum

## 1. Introduction

Food analysis and inspection is a professional basic compulsory course for food science and engineering majors, and a course that closely integrates theory with practical daily life [1]. Through the study of this course, students can master the principles and methods of physical and chemical analysis of basic food nutrients, food additives, harmful substances in food, etc., and understand the inspection of several types of food components, so that students can independently analyze and operate, and obtain accurate results. Analyze the results. Through experimental teaching, students' ability to operate and solve problems can be cultivated, which is helpful to improve their scientific research ability. The knowledge and skills taught in this course involve all aspects of the food industry chain, including food raw materials, food processing, storage, food quality control, food safety, nutritional component identification and other fields. It is highly scientific and applied [2]. In the teaching of this course, it is easy to penetrate scientific and professional quality education, instill knowledge of food safety laws and regulations, so as to help students establish a correct outlook on life, world outlook, values, self-confidence, lofty ideals and patriotism [3].

## 2. The Current Teaching Status of "Food Analysis and Inspection" Course

The "Food Analysis and Inspection" course is an important professional course required for food quality and safety students, usually offered in the 5th semester. The teaching content mainly involves the detection and analysis of food nutritional components, food physical properties, food additives, and toxic and harmful substances in food. Because of its rich teaching content and strong applicability, it plays a very important role in cultivating and improving students' detection technology and ability to analyze problems independently. It is an important course for cultivating high-quality applied talents. During the organization, implementation and evaluation of the teaching activities of the teaching team members in the past three years, it is found that there are mainly the following problems in the teaching practice of the "Food Analysis and Inspection" course:

### 2.1. In Terms of Teaching Methods.

Traditional teaching is mainly the combination of multimedia teaching and blackboard writing, that is, teachers transmit knowledge points through teaching materials, PPT and blackboards. In this "indoctrination" one-way teaching mode, students' enthusiasm for learning in the classroom is not easy to sustain, and students' ability to actively explore and think is easily constrained. Without the guidance of external interventions, it is difficult for students to independently develop the good habit of previewing before class and consolidating knowledge points after class. In addition, due to the large class size, it is difficult for teachers to grasp the effect of classroom interaction with students and the learning effect of students in traditional classrooms.

### 2.2. The Content of the Course.

The study of "Food Analysis and Inspection" requires a systematic understanding of food ingredients and toxic and harmful substances on the basis of courses such as "Inorganic and Analytical Chemistry", "Organic

Chemistry", "Food Chemistry", "Food Microbiology" and "Food Sensory Evaluation". Analysis and testing, so the requirements for students' professional foundation are higher. In addition, courses such as "Food Analysis and Inspection", "Inorganic and Analytical Chemistry", and "Instrumental Analysis Technology" are all analytical courses, and there is a certain degree of overlap and repetition in teaching content. Due to the fact that multiple prerequisite courses are involved, and the class hours and class time are limited, the amount of teaching information in the class is large, which makes it difficult for students to quickly grasp the theoretical knowledge in the "Food Analysis" class and integrate with the knowledge of other prerequisite courses in a limited time. In addition, the lack of moral education elements related to professional ideals and professional ethics education in the "Food Analysis and Inspection" course leads to a lack of endogenous learning motivation and lack of professional interest among students.

### 2.3 Course Assessment.

The comprehensive score of the "Food Analysis and Inspection" course consists of the usual assessment (including attendance, class performance, notes, and homework) and the final closed-book examination, with a weight of 40% and 60%, respectively. Due to the uneven professional foundation of students, the thinking of some students in the classroom cannot keep up with the teacher's explanation ideas and teaching rhythm, and the assessment form of uniform difficulty often cannot stimulate the enthusiasm of these students to learn; Students who are easily affected by the network content of mobile phones and other mobile terminals in class are not easily attracted by the monotonous form of assessment. The question types of the closed-book exam papers at the end of the term are mainly subjective topics, involving a large number of theoretical knowledge points, and lack of practical-related knowledge points assessment. Students can get high scores through short-term rote review, and it is difficult to truly understand students' knowledge. The degree of mastery of the points, and increase the pressure on students to take the test.

### 3. Course Ideological and Political Teaching Design Ideas

According to the orientation of the training goal of applied talents, as a compulsory course for food majors, this course focuses on the cultivation of students' ability and aims at cultivating high-quality and high-skilled talents. Adopt the teaching mode of "one-line penetration, dual combination, three modules", which takes vocational ability training as the main line throughout the entire teaching process, closely combines theoretical teaching and practical teaching, and combines ability goals, knowledge goals, and professional quality goals organic unity [4]. For the part of in-depth ideological and political education for the establishment of professional quality goals, during the course development process, students' awareness of integrity management, production

of safe food, and resolute crackdown on counterfeit and shoddy food is cultivated.

The dynamic of food quality and safety is introduced into the course, to cultivate students' professional sensitivity as food people, to cultivate students' awareness of safety and integrity of production and operation through case analysis, and to cultivate students' professional quality in the course [5].

### 4. Practice and Measures

#### 4.1 Highlight the Application-oriented Teaching Content and Integrate the Elements of "Course Ideology and Politics"

The main content of the "Food Analysis and Inspection" course includes 12 chapters including carbohydrate analysis, lipid analysis, protein and amino acid analysis, food additive analysis, and determination of harmful substances in food. In order to make use of the limited course hours, in addition to starting the online and offline hybrid teaching method, colleges and universities mainly optimize their teaching content in two aspects: First, pay more attention to the explanation of applied knowledge points, and organically combine theoretical knowledge with experimental teaching. Unify the teaching progress of "food analysis and inspection" and experimental courses. Secondly, based on our scientific research experience and cognition, we integrate the frontier development of disciplines, laboratory resources, experimental design of graduation thesis, as well as professional ideals, professional ethics education and other moral education elements into the teaching process, so as to facilitate students to "food analysis". The content of the course is integrated with follow-up courses such as "Instrumental Analysis Technology", graduation practice, graduation thesis (design). At the same time, in order to better organically combine the theoretical knowledge in the "Food Analysis" class with the experimental content. On this basis, students can be guided to consider the biuret method, Folin-phenol method, BCA method, Coomassie brilliant blue colorimetry and other rapid protein determination methods in the experimental design of graduation thesis or future scientific research and job positions. Finally, according to the existing resources in the laboratory, the use of modern instruments such as automatic Kjeldahl nitrogen analyzer (BUCHI, Switzerland) and amino acid automatic analyzer (SYKAM, Germany) is briefly introduced.

In addition, the current events and news related to this course, such as food quality and safety, are added to the classroom. Through the sharing of collected information, students can understand the current situation of food analysis and inspection and the relevant laws of the country, and cultivate students as food people. Occupational sensitivities concerned with food safety. Try to add food-related news at the beginning of each course, let students analyze how to use the knowledge learned in this course to solve problems, and let everyone realize that food analysis and testing are important. The application of food quality monitoring, safety, nutrition and other aspects.

#### 4.2. Project-based Teaching and Experimental Program Design

For example, in the teaching of adulterated food inspection, let students design food adulteration inspection experimental plan, supplemented by teacher's guidance and students' discussion, to develop their correct awareness of producing safe food and combating counterfeit and shoddy, pay attention to guiding In the process of students' adulteration inspection, strengthen the ideological and political education of students, guide students to realize the legal and moral errors of food adulteration, and promote students to fully realize the harm of food adulteration, so as to help students form good food. Safety awareness, guide students to consciously adhere to the awareness of combating counterfeiting and shoddy in the follow-up study and work process.

#### 4.3. Competition Guidance

Actively organize students to participate in food analysis and inspection-related skill competitions, improve their professional skills, become familiar with various food analysis and inspection methods and theoretical knowledge, and enhance their ability to identify food ingredients. In this link, we introduce various food inspection technologies that are popular in the market, and then organize students to conduct on-site inspection and screening. In this process, we pay attention to guide students to learn relevant inspection methods and theoretical basis. The on-site training helps students to comprehensively strengthen the ability of food analysis and inspection, improve students' theoretical accomplishment, strengthen students' professional skills, and achieve good teaching results. At the same time, in the process of food inspection, attention should be paid to guiding students to study relevant laws and regulations, guiding students to recognize the harm caused by food quality problems ideologically and legally, and enhancing students' ideological value orientation, so as to provide better guidance for the follow-up. Lay the foundation for development.

#### 4.4. On-the-spot Study in the Enterprise

Apply the project "Construction of Food Analysis and Inspection Production-Education Integrated Training Base" in the early stage of this course to teaching, let students go to the enterprise to learn the practical application of food analysis and inspection in the production process of the enterprise, and understand the practical application of food analysis and inspection in the production process of the enterprise in practice. The knowledge and skills learned in the process, so as to establish the awareness of GMP good practice.

#### 4.5 Improvement of the Assessment System

Under the background of new engineering, the professional skills of talents are as important as professional ethics. As an important means of practical teaching evaluation, experimental assessment, the comprehensiveness and scientific nature of the

assessment system directly affects the improvement of students' comprehensive professional quality [7]. Vocational skills do not represent the comprehensive professional quality of talents. Professional ethics and character are mostly hidden qualities, which are the foundation of building people and the fundamental guarantee for the all-round development of talents. They should be placed at the top of the all-round development of talents. Incorporate students' professional ethics and character into the "Food Analysis and Inspection" experimental course assessment system, and establish a complete, objective and reasonable professional ethics and character assessment system. In the assessment process, we combine the performance of the students in the experimental process. For example, students who actively participate in or undertake additional experimental work such as reagent preparation, pre-experiment, blank test, calibration, and standard curve preparation should receive extra points; Students who are serious, not rigorous, and unable to actively acquire knowledge should be deducted. By formulating a reward and punishment system, the professional ethics, professional attitude and professional style of each student are scientifically and reasonably assessed, thereby improving students' independence, sense of responsibility, sense of responsibility, professionalism, team awareness, and professional ethics.

### 5. Teaching Evaluation

Strengthen the assessment of students' usual study, help students develop good study habits, and avoid the surprise test-oriented study method at the end of the term. In the academic assessment, the usual grades and final grades can be divided into five and five. Pay attention to the cultivation of students' ability, and encourage students to actively discover, analyze and solve problems. According to the characteristics of food analysis and inspection courses, the degree of mastery of food analysis and inspection knowledge is largely reflected in the experimental ability, and the scores of ability assessment and knowledge assessment should be 64%. In order to achieve the purpose of cultivating students' self-learning ability, practical ability, judgment ability, expression ability and innovation ability. The values of education are conveyed through the teaching evaluation system [6].

### 6. Conclusion

The integration of ideological and political elements in the teaching process organically integrates the subject knowledge of the "Food Analysis and Inspection" course with ideological and political education. The whole teaching process not only enriches the content of professional courses, but also makes the teaching of professional courses more in-depth. The integration of ideological and political elements in the curriculum activates the classroom atmosphere, improves students' enthusiasm for learning, and stimulates students' internal driving force from passive learning to active learning. Students are more serious and rigorous in the learning process, and can pay attention to teamwork and

communication skills in the process of experimental operation. At the same time, it also promotes the formation of a good world outlook, outlook on life and values for college students. On the other hand, the education of ideological and political elements of food safety not only cultivates students' professional awareness of social roles, but also enables students to clarify their own social responsibilities and enhance their sense of social responsibility.

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