

Engineering Education Professional Accreditation and Innovative Application of Food Toxicology Teaching Design

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Abstract: Engineering Education Professional Accreditation (EEPA) has had many positive effects on engineering majors, guaranteeing the quality of talents entering the engineering profession in the industrial world, and also put forward reform requirements for engineering majors in universities. Food toxicology is an important subject in food safety-related majors. At this stage of teaching, there are problems such as weak student foundation, weak practical teaching, and poor effectiveness of multimedia applications. This leads to insufficient quality of toxicology teaching, which is not conducive to improving students' abilities. This article first elaborates on the significance of engineering education cognition to promote the teaching reform in colleges and universities, and then deeply analyzes the current problems of food toxicology teaching, and proposes corresponding teaching innovation strategies.

Keywords: EEPA; Food Toxicology; Teaching Innovation

Food toxicology studies the properties of exogenous chemicals in food, their sources and the principles of their formation, and determines the safety limits of these substances and the safety of foods based on the effects and mechanisms of chemicals. Food toxicology is a very important foundation in food safety engineering. The core of EEPA is to ensure that food safety and other engineering professionals can meet the established industry requirements and quality standards for talent training after completing undergraduate studies. Therefore, teaching should be student-centered and professional skills-oriented. It is conducive to adopting high-quality methods to continue to carry out theoretical and practical teaching to improve the quality of professional personnel training and provide professional talents to relevant industries. As a typical engineering major, food safety is closely related to people's life, health and safety. It is necessary to do a good job in teaching food toxicology and other courses, and optimize and innovate in terms of talent allocation, course content, teaching conditions, and practical platforms to make students acquire theoretical and practical ability that meets the requirements of the professional engineering certification.

1. The significance of EEPA for the reform of engineering education

First of all, with economic globalization, China is increasingly in line with international standards and competing with other powerful countries. Theories such as OBE in engineering education have long been fully applied to engineering teaching in the United States, the European Union and other countries. China naturally needs to meet the needs of the times, adapt to the new requirements of the domestic industry on talent training, and effectively carry out engineering education.

Secondly, at present, the engineering talents with a bachelor's degree or above is the first in the world in China, but from the reality of engineering development, it reflects many problems such as insufficient talents and poor applicability of engineering

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talents. Therefore, it is of practical need to perfect engineering cognition and promote engineering professional reform.

Finally, engineering majors attach great importance to practical teaching. The practice is the soul and basic feature of engineering education, and engineering education certification will inevitably strengthen the practical link in professional education. Colleges use this as an opportunity to optimize training goals and improve graduation requirements, not only for reaching professional cognition standards but also to promote students to master more real knowledge and skills. Good practice teaching also greatly promotes students' thinking and innovative ability to solve engineering problems, so it can have a positive impact on students' employment and career development.

2. Deficiencies in the teaching of food toxicology

2.1 There are many courses and the number of hours is unreasonable

The textbooks used in colleges and universities offering food toxicology courses are mostly 12-15 chapters or divided into 10 functional theoretical projects and related experimental projects. At present, there are many different versions of textbooks, but the content is not much different. Taken together, the content of the course includes the basic knowledge of food toxicology, as well as the biological, physiological, microbiological, genetic, pathological and other subject knowledge related to food chemicals and their roles. Therefore, the content is relatively extensive and the knowledge points are complex and easy to confuse, students have greater difficulties in learning, memory and application. The general requirement is that the course should have 48 class hours, including 32 class hours of theory teaching and 16 class hours of experiments. However, many colleges and universities have a significant reduction in the number of class hours. Teachers often guarantee the integrity of teaching and focus on theoretical classes, resulting in ignoring many experiments, which is not conducive to students' ability to improve engineering applications.

2.2 Weak student foundation and limited teacher ability

The content of food toxicology is closely related to people's daily diet, and involves a wide range of areas. Therefore, students need to have good basic knowledge, and teachers need to have excellent theoretical knowledge and practice, organizational skills and high academic comprehensiveness. This course involves many cutting-edge sciences such as protein structure. If students have a weak foundation before, it is likely to be difficult in the course of learning. The course is comprehensive and has many experimental classes, and it also has high requirements for teachers. In actual teaching, because the content involves multiple disciplines, different professors may be required to teach different topics. This solves the problem of insufficient teachers' ability to a certain extent, but due to the differences in teaching methods and focus of each teacher, it will cause students Many inconveniences are not conducive to its rapid adaptation to the teaching environment, mastery and application of knowledge.

2.3 The effectiveness of multimedia teaching applications is poor

Many colleges and universities have widely used multimedia equipment and resources in theoretical and experimental courses to present the original abstract and difficult-to-express knowledge to students in an intuitive and interesting form, which can enhance students' learning efficiency and interest. However, to take advantage of the many advantages of multimedia, it is not that the more multimedia is used, the better the effect will be. The effectiveness of teaching still depends on the good interaction between teachers and students and reasonable teaching arrangements. In actual teaching, there are problems of excessive use of multimedia or unreasonable content, which leads students to pay too much attention to the relevant content presented by multimedia, and ignore the importance of hard research and practice. Too much use of pre-set multimedia content for teaching, It is also not conducive to improving students' imagination and creativity.

2.4 Teaching resources are limited, and the experimental link needs to be improved

There are a lot of experimental links in food toxicology. Under the background of engineering cognition, more emphasis is placed on training students to integrate theory and practice. It mainly includes experiments on the micronucleus of mouse bone marrow cells. The investigation found that due to limited resources and other reasons, many undergraduate colleges have failed to build a perfect experimental platform, and there are also problems such as the lack of experimental links, resulting in the failure to effectively train students according to professional training plans.

3. Innovative application strategies of food toxicology teaching design in the context of EEPA

3.1 Improve teachers' comprehensive level and strengthen teaching interaction

Improving teachers' teaching concepts, abilities and literacy is an important prerequisite for improving engineering certification

and food toxicology teaching quality. Based on the characteristics of the content of the course and the rapid update, teachers should actively collect preface knowledge, break the limitations of classroom teaching materials and the limits of teaching, and help students update and enrich relevant knowledge. Teachers should help themselves quickly improve their comprehensive literacy through strategies such as daily teaching reflection and teaching supervision.

In teaching, it is necessary to strengthen teaching interaction and improve students' concentration and depth of thinking. Psychological studies have shown that in the relaxed state, the human cerebral cortex will form an excitement center, which makes the person's thinking more agile. Therefore, teachers should also create a relaxed and interactive classroom environment for students.

3.2 Reasonable application of multimedia

In order to effectively improve the teaching efficiency and ensure the teaching quality, multimedia equipment and resources should be used reasonably. The application of multimedia in teaching, in addition to selecting and making interesting course construction, can also be used in micro-classes, such as animation to expand students' knowledge capacity and make up for the lack of teaching materials. In addition, teachers should control the usage of media well. They should not rely too much on multimedia, but be student-centered and choose high-quality teaching content.

3.3 Optimize course content and strengthen practical teaching

Schools should create more complete and diversified practical platforms for students by strengthening school-enterprise cooperation and perfecting the dual innovation platform. Teachers can use methods such as group case study to provide a scientific background for the experiment, so that the content of the experiment is not single, and students can effectively improve their practical skills and thinking skills through exploratory experiments. In order to optimize the curriculum structure, we can balance the experimental and theoretical class hours according to the actual situation and streamline the theoretical class content appropriately to ensure that the experimental teaching is carried out effectively.

3.4 Optimizing the teaching assessment system to enhance students' initiative

The evaluation of food toxicology can be separated into theoretical and experimental courses. In the evaluation of theoretical courses, attention should be paid to student attendance, classroom performance and homework. The evaluation of experimental courses should set more complex and precise evaluation indicators to strengthen the results Evaluation of reports and other content should follow the standards that attaches importance to procedural and formative evaluation, to improve students' initiative, make them more active in learning knowledge, and increase their hands-on frequency and thinking ability.

4. Conclusion

In summary, engineering certification is very necessary for teaching reform. Under this background, food toxicology should be more systematic and reasonable in teaching innovation. Based on the analysis of the current problems in this course, this article comprehensively explores how to improve the effectiveness of current food toxicology teaching in terms of course content, teaching methods, teacher ability, course evaluation, etc., making it more in line with the project. The certification requirements universities and colleges provide the society with food engineering talents of higher ability and quality.

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