

# Research on and Application of the Construction of Internship Practice Curriculum for Applied Chemistry Specialties with Vocational Education Characteristics

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**Abstract:** vocational education is an important part of the national education system and human resources development. Vocational education is an important part of the national education system and human resources development. It is an important way for the majority of young people to open the door to success and fulfillment, and shoulders the important responsibility of cultivating diversified talents, passing on technical skills, and promoting employment and entrepreneurship. It is important to attach great importance to and accelerate the development of vocational education. However, at present, some vocational education schools are influenced by the traditional education model, and in the teaching process, they tend to focus on theoretical indoctrination, which leads to students' difficulties in meeting the needs of jobs after graduation, which is obviously contrary to the purpose of the state's establishment of vocational education. Therefore, it is extremely important to construct the internship practice course construction of applied chemistry specialty with vocational education characteristics. This thesis will try to analyze the ways and means of constructing the internship practice courses of applied chemistry majors, and I hope it has certain reference value.

**Keywords:** Vocational education; Applied chemistry; Curriculum development; Construction research; Construction practice

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## 1 Current Status of Practical Teaching of Applied Chemistry

Practice without theoretical guidance is blind practice, and theory without practical verification is empty theory. If you want to ensure the teaching quality of applied chemistry, it is necessary to take the road of combining theory and practice, to build a unity of applied chemistry professional learning, so that students learn in the classroom, can be abstract and complex concepts into an important productivity that can improve daily life. However, at present, in this regard, China's teaching still exists obvious deficiencies. Its main performance is as follows: ① practice is biased towards verification. Nowadays, some teachers carry out practical teaching, the content of which is not related to the students' specialties, favoring verification, resulting in the quality of teaching falls far short of expectations. ② single form of practical teaching: some schools of applied chemistry seriously lack of seminars to train students to analyze and solve problems, and even if there are seminars, mainly to instill the main, not conducive to the development of students' thinking, resulting in the quality of teaching greatly reduced. Neglect of practical activities outside the school: Although the state has repeatedly emphasized the importance of school-enterprise cooperation, but at present there are still some vocational schools, ignoring the practical activities outside the school, and did not carry out effective cooperation with the relevant enterprises, resulting in the lack of systematic knowledge and understanding of the students of the first line of applied chemistry, after graduation, it is difficult to complete the transition from school students to professionals in a timely manner. Lack of equipment and instruments. As we all know, when practicing applied chemistry, it is indispensable to have all kinds of equipment and instruments, but some vocational teaching schools do not have sound facilities, and even some instruments are used for too long, resulting in frequent failures.

## 2 Principles to follow when teaching applied chemistry practice

First, the principle of combining practical guidance and enlightened thinking: teachers should grasp the basic features of practice-based, organization, the use of a variety of practical activities, play the role of practice on the students' understanding, emotion, will, behavior, and attitudes, methods of motivation, guidance. In this process, teachers should first teach students how to observe, and timely remind students what to observe, how to observe, etc., and will lead students' observation to depth. At the same time, to be in the process of practice, should abandon the traditional education model based on indoctrination, timely interspersed with explanations, and to the students to ask inspiring

questions, so that students actively think, exercise their thinking ability, to lay a strong foundation for their subsequent work.

Second, the principle of comprehensive development: the principle of comprehensive development is also known as the principle of education. Because education in a broad sense includes three aspects of knowledge and skills education, intellectual development and quality of thought education, and “comprehensive development” includes all three aspects. In the process of practical teaching, teachers of applied chemistry should actively implement the principle of comprehensive development, and resolutely oppose the ideas and practices of teaching without educating, neglecting double-basic teaching, neglecting the cultivation of intelligence, neglecting ideological and political education and the cultivation of good quality.

Third, the principle of sociality. The principle of sociality refers to the close connection between social life and academic education, and guiding students to use what they have learned to solve practical problems through the introduction of practical problems in social life. Specifically, in the process of practical teaching, teachers can introduce some social problems, such as “protecting the environment”, “conserving resources” and so on, and guide students to use chemical knowledge to analyze and solve these problems. This will not only help students to better grasp chemical knowledge, but also raise their awareness of environmental protection and make them realize their responsibilities and obligations as citizens.

### **3 Practical Teaching Strategies for Applied Chemistry Majors**

#### **3.1 Create high-level applied teachers**

The teaching level of vocational applied chemistry majors is closely related to the ability of teachers. Therefore, each vocational school should be committed to creating high-level, high-quality applied chemistry teachers, the specific ways to create are as follows:

First, vocational schools strengthen the operational skills of teachers, improve their “dual-teacher quality”, and build a high-level teaching team so that they can better serve students. For example, school leaders can hire experienced external experts, or practitioners in the applied chemistry industry (such as chemical industry practitioners and pharmaceutical industry practitioners), combined with their own work experience, to provide effective training services for the school teachers and teachers. The school should set up a practical training assessment system to link the training results with the actual interests of the teachers, to improve the enthusiasm and initiative of the teachers to participate in the training, so that the teachers can change from the traditional training perspective of “want me to train” to “I want to train”. At the same time, the school can also implement the “top job” teacher training method, the so-called “fixed job” refers to the short and medium-term professional training, cooperative research and development, and posting and other ways, so that teachers specializing in applied chemistry to go to the front line of the work, so as to strengthen the application of chemistry. The so-called “fixed-term work” means that through short-term and medium-term professional training, cooperative research and development, attachment and other ways, the teachers of applied chemistry can go to the front line of the work, so as to strengthen the “dual-teacher quality” of the teachers of applied chemistry, improve their practical skills, so as to make their understanding of the specialty, which can always be located in the forefront of the times, and to provide strong help for the subsequent practice of teaching.

#### **3.2 Reform practical teaching method**

In order to ensure the quality of practical teaching, teachers should reform the existing practical teaching methods and promote the training mechanism of “industry-university-research” combination, which can make the practical teaching mode of “Applied Chemistry” get further development. For example, before the internship, some tutors can learn more about the problems encountered by enterprises in practical work and the types of talents they need, write investigation reports, and incorporate them into the internship guidelines. When the trainees are practicing, they can focus on the contents of these guides, so as to ensure that they meet the actual needs of the enterprises<sup>[7]</sup>. At the same time, teachers can also combine the practical activities of graduation design with industry-university research, in which teachers can take the actual needs of the enterprise as the entry point, and after refining the project refinement, break it down into several modules so that it becomes the theme of graduation design. Through this type of topic can let students in the learning process, all-round, multi-dimensional

experience of their own value, and at the same time, can also deeply appreciate their own sense of achievement after completing a task, to enhance the interest in future work. If conditions permit, vocational education schools can arrange for graduates to go to the relevant enterprises to carry out graduation design. Through this way of learning, not only can effectively solve the practical problems in the enterprise, at the same time, also can use the students to adapt to the needs of the enterprise, realize the win-win situation between the enterprise and the students

## Conclusion

In conclusion, internships and practical courses are an indispensable and important part of applied chemistry majors. Leaders and teachers of vocational schools should read relevant academic theories and learn from advanced experiences at home and abroad, so as to improve their knowledge and understanding of internship and practical courses. Provide students with more systematic and perfect teaching services, so that after graduation, they can adapt to the working environment in the first time, paving the way for their subsequent development.

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## Project Information:

Yunnan Normal University’s Provincial First Class Professional Construction Project in Applied Chemistry (020002050205020037), Yunnan Normal University’s Undergraduate Teaching Construction Project (02000205020502001), and College Student Research Innovation Program Project (02000205020503060, DC2023010)