

# Research on the Construction of Teaching Materials in Applied Universities under the Background of Integration of Production and Education

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**Abstract:** As the key position of cultivating practical talents, the construction of teaching materials in application-oriented universities is particularly important. This paper will discuss the theoretical basis, current situation and strategy of the construction of teaching materials in applied colleges and universities under the background of the integration of production and education. As a mode of close contact between education and industry, the integration of production and education aims to make education closer to the actual needs and cultivate applied talents to adapt to modern industry. In this context, the construction of teaching materials is no longer a traditional knowledge imparting, but needs to be in line with the needs of the industry, practical and applied. However, the construction of teaching materials in applied colleges and universities is facing a series of challenges, including the disconnection between the content of teaching materials and the needs of the industry, the lack of updating speed of teaching materials, and the lack of practice and innovation orientation. In order to solve these problems, a series of strategies are proposed as follows, including strengthening school-enterprise cooperation, updating the content of teaching materials, enhancing practicality and project orientation, and promoting dynamic updating and flexibility adjustment of teaching materials.

**Keywords:** Integration of production and education; Application-oriented colleges and universities; Construction of teaching materials

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## Introduction:

With the rapid development of China's economy and the continuous upgrading of industrial structure, higher education is facing new challenges and opportunities. The purpose of this paper is to explore the key strategies and practices of teaching materials construction in applied universities under the background of integration of production and education. By analyzing the theoretical basis of the integration of production and education, as well as the current situation of the construction of teaching materials, four key strategies are proposed, such as strengthening school-enterprise cooperation, updating the content of teaching materials, enhancing practicality and project orientation, and promoting the dynamic update and flexibility adjustment of teaching materials.

## 1. Analysis of the current situation of the construction of teaching materials in applied universities

### 1.1 The content of teaching materials is out of line with the needs of the industry

At present, there is a significant problem in the construction of teaching materials in applied colleges and universities: the disconnection between the content of teaching materials and the actual needs of the industry. Many textbooks still use traditional theories and outdated technologies, and lack a reflection of the latest industry trends and technological advances. This situation leads to the gap between students' theoretical study and practical work skills, which affects the employment competitiveness of graduates.

### 1.2 Lack of practice and innovation orientation

The construction of application-oriented university teaching materials also faces an important challenge, that is, the lack of sufficient practicality and innovation orientation. Most textbooks focus on the teaching of theoretical knowledge, while ignoring the

cultivation of practical skills and the stimulation of innovative thinking. This kind of theory-oriented teaching content is difficult to meet the training needs of applied talents.

## **2. Strategies for the construction of teaching materials under the integration of production and education**

### **2.1 Strengthen school-enterprise cooperation and jointly develop teaching materials**

Under the background of the integration of production and education, strengthening school-enterprise cooperation is one of the key strategies for the construction of teaching materials. This cooperation model aims to improve the practicality and foresight of teaching materials through close cooperation between enterprises and universities to jointly develop teaching materials that meet the needs of the industry<sup>[1]</sup>.

First, companies can provide universities with the latest industry trends, technology trends and specific needs. Through this information, textbook writers can ensure the timeliness and applicability of the content, and make the textbook more in line with market demand. For example, companies can provide data and cases on the application of new technologies, changes in market demand, etc., and provide rich practical materials for teaching materials.

Secondly, school-enterprise cooperation can promote the practicality of teaching materials. Enterprises can participate in the actual preparation of teaching materials, provide case studies of actual work scenarios, and guide to the operation of professional skills. This can not only help students better understand the theoretical knowledge, but also improve their practical operation ability and problem solving ability.

Furthermore, the participation of enterprises can also help college teachers understand the latest needs of the industry, so as to better adjust the teaching content and methods. Through the actual work needs and challenges provided by enterprises, teachers can integrate these elements into teaching, make the curriculum closer to reality, and improve students' professional adaptability.

Finally, school-enterprise cooperation also contributes to the continuous updating of teaching materials. Enterprises and universities can establish long-term cooperative relations and regularly update the contents of teaching materials to ensure that the teaching materials can continuously reflect the latest technology and industry development trends.

### **2.2 Update the content of teaching materials to reflect the latest technology and industry trends**

First of all, the update of teaching materials needs to keep up with the development trend of China's main industries. For example, with the rapid development of artificial intelligence, big data, new energy, high-speed railway and other fields in China, the relevant teaching materials should timely reflect the latest theories, technologies and application cases in these fields. This not only helps students to master cutting-edge knowledge, but also lays a solid foundation for their future career development.

Secondly, the update of teaching materials should be combined with the national education policy and industrial policy. With the promotion of the innovation-driven development strategy of the Chinese government and the emphasis on the cultivation of high-skilled talents, the content update of teaching materials should fully consider these policy orientations to better serve the country's strategic needs.

Furthermore, taking into account the diversity of China's regional economic development, the update of teaching materials should also pay attention to reflect the industrial characteristics and technical needs of different regions.

Finally, in order to ensure the timely updating of teaching materials, digital and networked means, such as online teaching materials and digital resource libraries, can be used to quickly reflect and integrate the latest technological developments and academic research results. This approach not only improves the efficiency of updating teaching materials, but also facilitates students to obtain the latest learning resources.

### **2.3 Improving the applicability of teaching materials enhancing practicality and project orientation**

In order to meet the needs of the transformation of higher education in China, it is an important strategy to enhance the practicality and project orientation of teaching materials in applied universities. This strategy aims to improve the application of teaching materials by combining theory with practice, so as to better cultivate students' practical ability and innovative thinking<sup>[2]</sup>.

First of all, teaching materials should incorporate more practical cases and operational guidelines. This means not only introducing theoretical knowledge, but also providing application examples in the actual work environment, such as engineering projects, experimental operations, case studies, etc. Such content design can help students transform abstract theoretical knowledge into concrete operational skills and enhance their ability to solve practical problems.

Secondly, the construction of teaching materials should strengthen the link with the actual industry. This can be achieved by

inviting industry experts to participate in the development of teaching materials, including industry standards and norms in teaching materials, and setting industry-related project tasks. These measures can not only provide the latest industry knowledge, but also enable students to better understand the operation and development trends of the industry.

Furthermore, teaching materials should be designed with more project-based learning modules. This module allows students to learn and apply knowledge in a simulated or real project environment, thereby improving students' project management, teamwork and complex problem-solving skills. In this way, students can learn in practice and gradually form the ability to use knowledge to solve problems.

Finally, the teaching materials should adopt flexible and diverse teaching methods, such as flipped classroom, case teaching, simulation training, etc., in order to improve students' participation and interest in learning. This diversified teaching method can stimulate students' spirit of exploration and innovative thinking, and further improve the application of teaching materials [3].

## **2.4 Promote dynamic updating and flexible adjustment of teaching materials**

In the construction of teaching materials in applied universities, it is very important to promote the dynamic update and flexible adjustment of teaching materials in order to cope with the rapidly changing education and industrial environment. Here are some strategies to help achieve this goal:

First, establish a mechanism and process for updating teaching materials. Colleges and universities should set up a special textbook update committee or group, responsible for regular review and update of teaching materials. These institutions should work closely with teachers, industry experts and corporate partners in relevant subject areas to collect and analyze the latest technological developments and industry trends in order to adjust the content of teaching materials in a timely manner.

Second, use digital teaching materials and online resources. Digital teaching materials have the characteristics of high flexibility and easy to update, which can be modified and supplemented at any time according to the needs. At the same time, the online resource library can provide the latest academic literature, case studies and practical tools to facilitate the updating of teaching materials.

Third, encourage teachers to participate in the updating of teaching materials. Teachers are key participants in the educational process, they have a deep understanding of the learning needs of students and the situation in the educational field. Therefore, encouraging teachers to actively participate in the compilation and updating of teaching materials can better meet the needs of students and improve the quality of teaching materials.

Fourth, establish a feedback mechanism. Students and teachers should be encouraged to provide feedback on the material, including comments and suggestions on the content. This feedback mechanism can help identify problems and improve programs in a timely manner to ensure the quality and usefulness of the materials.

## **Conclusion:**

To sum up, under the background of the integration of production and education, the research and practice of teaching materials construction in applied colleges and universities has important practical significance. Through the implementation of strategies such as strengthening school-enterprise cooperation, updating the content of teaching materials, enhancing practicality and project orientation, and promoting the dynamic update and flexibility adjustment of teaching materials, the practicality and applicability of teaching materials can be improved, which provides strong support for the cultivation of applied talents with practical operation ability and innovative thinking in applied colleges and universities.

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