

# Exploration on the Professional Teaching Mode of Applied Talents Training

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**Abstract:** In order to solve the shortcomings of the professional teaching results of the conventional applied talents training, this paper proposes the exploration on the professional teaching mode of applied talents training. It establishes a multi-angle and multi-level teaching knowledge system, increases the teaching content of professional design experiment, analyzes the professional teaching content based on the combination of teaching and doing, and completes the optimization of the professional teaching content of applied talents training; it also combines multimedia and network teaching to improve the professional quality of applied teachers, enhance their teaching ability and reform the teaching assessment methods of applied talents training, so as to optimize the professional teaching methods of applied talents training and complete the proposed exploration on the professional teaching mode of applied talents training.

**Keywords:** Applied talents; Professional training; Teaching mode; Teaching exploration

## 1. Introduction

Applied talents refer to a special type of talents who can apply professional knowledge and skills to the social practice they engage in. They are skilled in basic knowledge and basic skills of social production or social activities, mainly engaged in front-line production technology or professionals. Its specific connotation is developing with the development of higher education history. The concept of applied talents is relative to that of research talents [1]. The key points of work in 2014 clearly put forward that we should guide a number of undergraduate colleges and universities to transform into applied technology colleges and universities, and issued the "Decision on Accelerating the Development of Modern Vocational Education", and fully deployed to accelerate the development of modern vocational education. The "Decision" defines the guiding ideology, basic principles, objectives, tasks and policy measures for accelerating the development of modern vocational education in the coming period. It put forward that "by 2020, we should form a modern vocational education system with Chinese characteristics and world level that meets the needs of development, integrates production and education deeply, links up secondary vocational education with higher vocational education, communicates between vocational education and general education, embodies the concept of lifelong education" [2]. However, at present, there are some shortcomings in the professional teaching of applied talents training in China, such as unsatisfactory results and inadequate application ability. Therefore, this paper puts forward the exploration on the professional teaching mode of applied talents training.

## 2. Optimization of Professional Teaching content of Applied Talents Training

The optimization of the professional teaching content of applied talents is to explore the professional teaching content of applied talents. This paper relies on the establishment of multi-angle and multi-level teaching knowledge system, increases the teaching content of professional design experiment, and analyzes the professional teaching content based on the combination of teaching and doing to achieve the optimization of professional teaching content of applied talents training.

### 2.1. Establish a multi-angle and multi-level teaching knowledge system

The professional teaching of applied talents training is different from that of research talents training. The teaching of applied talents training is more inclined to the application of professional skills, and to solve practical problems of production and life by using professional skills knowledge. The teaching of scientific research talents training is an in-depth analysis of a certain aspect. The professional teaching of applied talents training is different from that of research talents training. Applied talents need to master a wide range of knowledge. They can solve problems through reference books, re-learning and their own basic knowledge. Therefore, it is necessary to establish a multi-angle and multi-level teaching knowledge system [3].

The professional teaching of applied talents training should pay attention to the construction of multi-angle and multi-level teaching knowledge system. Through the analysis from different angles and different levels, and

combining with the different courses offered by the professional disciplines, a perfect knowledge system should be constructed. Through different angles and levels, the knowledge system can be used to teach applied talents. In the process of teaching, it is necessary to pay attention to the connection between different courses offered by professional disciplines and the connection between the contents of courses. And a multi-courses comprehensive analysis of one problem should be made to carry out multi-angle and multi-level teaching.

For example, when training applied talents of applied metal material major, a comprehensive knowledge system should be constructed according to the courses offered by metal material major. For example, the courses offered by metal material major in a university include “Fundamentals of Material Science”, “Metal Metallurgy”, “Material Forming and Control Engineering”, and “Liquid Phase Change of Metal Material”, Solid Phase Change of Metal Material, “Metal Material Processing Technology”, etc. [4], using the above professional courses to construct a knowledge system, which includes the whole process from metal ore to metal parts. If there are problems in some links, the applied talents can solve the problems in the actual production through the establishment of knowledge system and the analysis of upstream and downstream processes.

**2.2. Increase the teaching content of professional design experiment**

The teaching of applied talents training must be closely related to the actual production and life, so as to solve the actual production and life problems. Traditional theory teaching cannot achieve the actual purpose of solving production and life problems, so it is necessary to increase the teaching content of professional design experiment [5].

Through multi-level professional design experiments, the theoretical teaching content can be verified, so that students can fully grasp the basic theoretical knowledge, find new problems according to the experimental process, and then solve new problems through experiments, so as to achieve the improvement of business ability.

The increasing of the teaching content of professional design experiment is different from that of traditional general experiment. The teaching content of general ex-

periment is mostly cognitive experiment and understanding experiment, through which the relevant theories and experimental facilities can be recognized. The increasing of the teaching content of professional design experiment is to increase the number and type of comprehensive experiment, so that students cannot only know the relevant theories and experimental facilities, but can solve the actual problems of production and life through the experimental content.

**2.3. Analyze the professional teaching content based on the combination of teaching and doing**

The combination of teaching and doing means that teachers teach through lectures and experiments. “Doing experiments” refers not only to science experiments, but also to market research and market analysis. Through the study of theoretical knowledge, the accumulation of relevant experiments, and the accumulation of actual production problems, the purpose of training applied talents is achieved [6].

It is difficult to solve the actual production problems only through theoretical teaching or experimental teaching. Combing the three, through the perfect knowledge system, the systematic design experimental teaching content, and the analysis of the problems encountered in actual production and life, a comprehensive analysis of the three can be carried out, and the professional teaching content can be analyzed, so that the applied talents can be trained in a comprehensive and multi-aspects manner.

Similarly, taking the training of applied talents in applied metal materials as an example, the knowledge system of metal materials is constructed through the main subjects of liquid phase change of metal materials, material forming and control engineering, solid phase change of metal materials, metal material technology and metal material processing technology. Through corresponding knowledge points, corresponding professional experiments should be designed, and through theoretical knowledge and professional experiments, as well as practical production problems, the teaching of applied talents can be realized. Table 1 shows several teaching and doing combination demonstrations of applied talents in metal materials major.

**Table 1 The teaching and doing combination demonstrations of applied talents in metal materials**

Number	Course name	Design of experiment	Actual production
1	Liquid phase change of metal materials	Testing of Pb-Sn phase diagram	Formulation of Pb-Sn process
2	Material forming and control engineering	Spiral casting experiment	Analysis of casting filling capability
3	Solid phase change of metal materials	Solid solution treatment of stainless steel	Improvement of mechanical properties
4	Metal material technology	Heat treatment of metal materials	Increase of hardness and toughness
5	Metal material processing technology	Forging stamping drawing bending calculation	Process parameter calculation

**3. Optimization of professional teaching methods for applied talent training**

The optimization of professional teaching methods for applied talents is to explore the professional teaching methods of applied talents. This paper combines practical work experience, points out that combining multimedia and network teaching, improving the professional quality of applied teachers, enhancing the ability of teaching business, and reforming the teaching assessment methods of applied talents training can achieve the optimization of professional teaching methods for applied talent training.

**3.1. Combining multimedia and network teaching**

In some very complicated, abstract, and difficult problems which cannot be understood by students through the schematic diagram, teachers can conduct on-site teaching through multimedia or network. Multimedia teaching is the teachers' collation of the professional information of the relevant multimedia types. In the theoretical teaching of this aspect, the students can more clearly grasp the theoretical knowledge by the multimedia video, pictures and audio.

Internet teaching is a method that teachers use the Internet for video teaching by taking the Internet as a transmission medium. The problems encountered by actual production enterprises cannot be moved to the classroom for analysis. For this reason, through the teachers' Internet teaching, the production problems that occur in the enterprises can be implemented distance learning, which can enrich the knowledge reserve of students.

For example, an enterprise has sporadic quality problems. The teacher analyzes the data, grasps the causes of the problems, conducts on-site connection through the network, and relies on the network teaching method to carry out theoretical and practical analysis for the applied talents.

**3.2. Improving the professional quality of applied teachers and enhancing the ability of teaching business**

Improving the professional quality of applied teachers and enhancing the ability of teaching business is a requirement for teaching quality. For the training of applied talents, teachers must have practical experience in solving problems and high-education graduates should be resolutely avoided to carry out teaching work directly.

The difference between applied talents training and research talents training is that the focus of the two is different. The applied talents training requires a solid theoretical foundation and a wealth of business capabilities to solve practical problems. The research talents training is to deepen the knowledge system and deepen the study of the knowledge system to achieve the purpose of research

talents training. Therefore, it is necessary to improve the professional quality of applied teachers.

Improving the professional quality of the applied teachers and enhancing the teaching business ability can be achieved through two aspects. One is to arrange the trainee teachers to learn when the main lecturers carry out teaching, and combine the content of their own learning to improve the business ability. The second is to actively solve the actual production and life problems, improve business capability through multiple channels.

**3.3. Reforming the teaching assessment methods of applied talents training**

The traditional assessment mode adopts the final written test method and it uses this test score as the final score of the talents. However, the single final written test score has great uncertainty and has incompleteness. The written test score can only prove whether the students' theoretical study is solid, but whether their theoretical knowledge can be applied to the experiments and can be applied to the actual production and life, the written test score cannot give an accurate assessment. For this, this paper recommends an applied talents training assessment method, as shown in Table 2:

**Table 2 The assessment method of applied talent training**

Items	Type	Proportion of scores
Class situation	Inspection	10%
Mid-term written test	Written test	20%
Final written test	Written test	20%
Usual test	Test	20%
Final comprehensive test	Test	20%
Ending thesis	Thesis	10%
Total		100%

Compared with the traditional examination mode - the method of final written test, the recommended applied talents training assessment method adopts six methods to carry out comprehensive assessment and evaluate the applied talents. In order to focus on the assessment of applied talents, the usual test, the final comprehensive test, and the ending thesis account for 50% of the total score.

The reform of the assessment methods of applied talents training can actively guide the applied talents to clearly grasp the basic theoretical knowledge, and enable them to guide production through theoretical knowledge and solve problems in actual production and life.

**4. Conclusion**

This paper puts forward the exploration of the professional teaching mode of applied talents training, based on the optimization of professional teaching content of applied talents training, and the optimization of professional teaching methods of applied talents training, to realize

the exploration of professional teaching mode of applied talents training. It is hoped that the research in this paper can provide a theoretical basis for the professional teaching mode of applied talents training.

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