

Analysis and Reflection of German Higher Vocational Education Training Mode

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Abstract—German higher vocational education training mode has distinctive features, In-depth study of the content and features of the German higher vocational education, and exploration of its regularity and successful experience will have great significance and inspiration on higher vocational education and applied chemical technology in higher vocation.

Keywords-Vocational education, training mode, feature, inspiration

I. INTRODUCTION

Implementation of higher vocational education is complex system engineering. Through in-depth cooperation between businesses, industry, the service sector and other outside organizations, vocational training institutions has become the consensus and characteristics of higher vocational education of all countries of the world. Germany passed legislation to establish a core role of "dual system" in the vocational education system, but also establish the dominance of business skills training in cooperation education of corporation and school. German vocational education national policy, personnel training mode, curriculum, teaching organization, school-enterprise cooperation have significant feature, they are also the cornerstone of industrial development in Germany. Good vocational education training model have a very important role in higher vocational education and the professional building of applied chemical technology in higher vocation.

II. TRAININGMODE OF HIGHER VOCATIONAL EDUCATION ABROAD

A. Personnel training objectives

German College cultured goal is: "to build the education on the basis of theoretical knowledge, and finally the students can pass the state's graduation exam, engage in independent professional activity." College graduates are generally working in the production sector, responsible for the structure specific processes, production of construction, equipment maintenance and product testing and other aspects of the work.

B. Teaching mode

Germany's dual system of teaching mode refers to the implementation of teaching activities in the enterprise and the implemented teaching model in vocational school.

(1) Theoretical Basis

Principle of combining theory and practice; stimulate students' driving force.

(2) Teaching goals

Enable the students to develop their personality and grow to shoulder the responsibility of citizens to society; enable students to master a broad theory and basic knowledge, but also has a strong professional practice skills; cultivate students' good work ethic, attitude and collaborative spirit.

(3) Teaching program

It is divided into two parts, theoretical teaching and practical teaching, ready to take practical teaching, explaining, imitation and consolidation, the "four stages of teaching.

(4) Teaching strategies

To fully mobilize and really play the role of enterprises in vocational and technical education; to have good laws and regulations for protection; To develop a comprehensive, rational and effective implementation of the program; to choose the best combination of the right theoretical knowledge and practical training.

In recent years, the German dual system also has new developments in vocational schools, under the guiding ideology of the organization of interdisciplinary teaching; create the "action-oriented approach" and "interdisciplinary teaching." Its general idea is to create open and integrative learning environment in vocational schools, organize teaching activities in accordance with the required thinking and behavior of the organization. Student becoming the center of the teaching activities throughout the learning process independently based on the overall teaching goal and teachers become the students' learning mentors. Principles of behavior-oriented pedagogy are both to teach knowledge, but also teach behavior operation to infer theoretical problems in the operation. By observing and thinking to guide and control the action, by the action of the students to develop their powers of observation and thinking. Interdisciplinary teaching is teaching complex subjects related organizations

across disciplinary boundaries, and to impose behavior-oriented education on this basis. German products replace fast, many varieties of small batch production, these characteristics required to take a compound model of production, so these two new teaching modes under the dual system of vocational education in Germany came into being.

C. Curriculum model

Ladder training is typical a curriculum model type used by German dual system mechanic training system. Use a segmented teaching, gradually from the base to the professional development, divided into three levels: basic education, professional education and expertise education, in addition to basic education in schools or vocational training institutions, mostly professional and educational expertise in the enterprise implementation, usually trained on the actual post.

D. Faculty

(1) To establish Vocational Normal College, technical college or vocational education teacher training centers, as a training base of vocational teachers.

(2) To Set the Department of Education in Higher Education that can issue a certificate of vocational teachers.

(3) To recommend industrial enterprises of engineers, technicians or skilled workers to teach in vocational schools or other vocational training centers.

(4) To establish a relatively stable part-time teachers.

III. ANALYSIS OF GERMAN VOCATIONAL EDUCATION TRAINING MODE

Vocational education emerged in the early 20th century, mainly to train community-based, application-oriented talents as the goal. Vocational education has very rapid development, to the mid-20th century; the number of students has reached 50% of the entire higher education. Development of vocational education in Germany made a great contribution to achieve economic growth of these countries, and the training model we can learn.

The most representative model in German is "dual system" mode. "Dual system" consist of the enterprise, and the vocational school, its main contents are: to cultivate a qualified utility personnel, must be carried out by the close cooperation of the two systems factories, enterprises and vocational schools. Students must first enroll apprentices to qualified enterprises, factories, after admitted, to sign the contract with the enterprise or the factories while studying at vocational education institutions. Currently, the higher education institutions in Germany to introduce "dual system" approach has been developed into the following three modes: one is stacking, that is theoretical and practical training carried out one by one; Second one is integrated model, that is theoretical and practical training carried out in parallel; Third, cross-righteous type model, that is theoretical teaching and practical training conducted cross-righteousness.

In "Dual system" training mode, training companies and vocational schools are interdependent and mutually reinforcing, indispensable. In the overall training objectives,

they are combined; in specific training process, it is divided into two, showing obvious "dual" property. "Dual system" of training mode, claiming to be "secret weapon" of German economic growth

IV. LEARNING FROM GERMAN HIGHER VOCATIONAL EDUCATION TRAINING MODE

A. To establish training objectives and standards of training adapt to the requirements of the new century

The goal is educated personnel training after a planned education and training activities in the future to achieve the training standards and requirements. Training objectives is the starting point of personnel training, reasonably determine the training objectives is an important part of the foundation and core training model for effective reform. To determine personnel training Higher Vocational Education goal, the main factors that should be considered as following:

(1) Educational function. Function of education is to nurture talent. Different historical periods, different social conditions, the educational function are different, mainly in education to meet the social requirements of different historical periods, the training of personnel of different nature. Determine the vocational education training objectives must fully implement the Party's education policy in the new century.

(2) Social needs. As a special education service industry, its personnel training must take into account the needs of society, so that trained people as possible to adapt to the needs of society. Since ordinary colleges and vocational colleges in the direction of personnel training have different focuses, the needs of society talent have more direct sense for talent training objectives in vocational colleges. Vocational education should focus on the practical needs of professionals in the region, highlight the local talents.

(3) Hierarchy and the specific school situation. Training objectives of higher vocational education with different levels: the first level is the senior specialized talents to the requirements of national standard, is the overall objective of all sectors of higher vocational education must be followed; second level is the specific objectives of school education of all kinds of levels, different regions and different types of schools, different specific professional vary greatly in training specifications. Each vocational colleges should follow the basic premise of the training objectives closely link to industry needs, reflecting the characteristics of the industry, to develop training objectives that can meet the social needs of industry. Personnel training specifications is specific training objective; it is about specific requirement of the quality of graduates. Mr. Pan Bieyuan considered that education quality standards can be divided into two levels: one is the general basic quality requirements; another is specific eligibility criteria. Here, the general quality requirements can be seen as a "training objectives", the specific eligibility criteria is "training specifications." Training Standards for the design of higher vocational education should be based on appropriate local economic development needs and the technical requirements of applied

expertise, and construct knowledge, ability and quality and competence structure reasonably. Its main contents include: the ideological and moral qualities, scientific literacy, professionalism, comprehensive ability, physical and mental qualities, have the necessary tools and methods.

B. Training Mode Reform

We believe that the current general idea of higher vocational education training model of reform is: According to the objective needs of the local community for technical application expertise, under the guidance of the correct ideological education (including national education policy and determining educational purposes), to properly position professional training objective. Then, according to the training objectives to design specifications, and then develop training programs based on training objectives and training specifications, according to the training objectives, training specifications and training programs to select and implement training pathways. In the process of reform and personnel training mode, we should focus on the following aspects:

(1) Under the guidance of market requirements, to set scientific professionals. Ministry of Education issued guidance vocational education specialty catalog in 2004, playing a role in macro-guidance and management in strengthening the professional development of higher vocational education. To enhance the dynamic adaptability of professional settings, professional setting can be adjusted to change with changes in industrial structure and demands of talents. In this way, you can be professional caliber width simultaneously, also has a rapid response capability to quickly adapt to the needs of social and professional and its conversion of hotspots and highlights, features are more obvious, better able to adapt to changes in the industry or the industrial structure and development trend.

(2) To optimize the curriculum system, reform the teaching contents. With the change of higher education system, vocational education is facing increasing pressures of survival and development, personnel training under higher vocational education should meet the needs of local economic development, and regional economic development has obvious differences, this difference should be reflected in the curriculum system and teaching content.

(3) Improve classroom teaching, improve teaching effectiveness. Change the traditional teaching mode "to impart knowledge-centered", breaking with teachers, classroom and materials as the center, so that students truly become masters of learning. Give up test ideas and methods of "test will be written" as well as the pursuit of "objective questions", "standard answer": The teaching and learning as process of "learning - practice - innovation", with particular emphasis on practice and innovation in teaching and learning position; in the teaching process, teachers are not only responsible for the course, but also serve as a guide throughout the growth process of the students.

(4) Strengthen the practice of teaching, improve operational ability. To ensure the practice of teaching, the following aspects should be done: First, the dispersion of

practice time, in the form of internships can also be dispersed mainly to improve assurance mechanisms; Second, through a variety of channels to organize students to participate in social practice; Third, if there are practical activities for students to participate in, classroom teaching should be "give way"; fourth is to strengthen training teaching and simulation teaching, moved some practice teaching to rooms, laboratories or training base.

(5) Use external resources to open education positively. One is open to industry and enterprise, invite industries, business leaders and experts to have lectures or give some lessons regularly, to compensate for the lack of practical experience of teachers in schools. To organize teachers and students participate in practice regularly to the real sector and enterprises, draw-in the distance of the school and the community; second is open to the nation, regularly invite experts and scholars to give lectures or for school reports, and encourage teachers to participate in the academic community activities and cooperation with talents outside the school; Third is to invite outside experts as consultants to guide the construction of schools and professional development, etc.; fourth is open to foreign countries, through cooperative education with universities abroad, send teachers abroad to study education, and conduct academic exchange of information with foreign universities and other ways and means to establish extensive contacts with foreign universities, and train international technical talents.

V. CONCLUSION

Due to the development of society, the social requirements of talents of higher vocational education training are also changing with the development of society. Moreover, the ideas and concepts of education are constantly changing; concept of personnel training quality is also changing with the reform of the ideas of educational. Therefore, the reform of talent training mode is never-ending.

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