

# Research on the Applied Talents Training of Three Chain Docking Oriented by Industry Demand

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**Abstract**—To improve the training quality of applied talents, it is necessary to promote the organic connection between application-oriented talents training and social needs. Taking the industry demand as the guidance, the paper outlines some of the basic strategies and discusses some related theoretical and practical issues. Personnel training should be geared to the development of industry. Make the professional curriculum chain, ability chain and post chain form three chain docking. Training, curriculum, teaching objectives and graduation ability, fully consider the characteristics of regional industry demand. The training unit, the enterprise technical personnel and the industry experts jointly formulate the professional talent training program. Through monitoring feedback mechanism, quality of personnel training is optimized. Practice has proved that the “three chain docking” applied talents training mode based on industrial demand has narrowed the gap between the application oriented talents training and social needs. Professional education directly meet the transformation and upgrading of industry.

**Keywords**—Applied talents; Demand orientation; Engineering education accreditation; Three chain connection

## I. INTRODUCTION

With the deepening of the popularization of higher education in China, the training mode [1] of applied talents has gradually entered the public field of vision, and has also been greatly developed, and its development speed is faster and faster. The “national long-term education reform and development plan (2010-2020)” clearly put forward the “higher education to meet the needs of national and regional economic and social development, focusing on expanding the application type, the scale of training compound, skilled talents.” As present, the quality of talent training in higher education can not meet the needs of economic and social development [2]. New changes have taken place in higher education. Firstly, the supply and demand translocation of talent market, from the University led supply driven into social demand driven. Two, higher education has shifted from large-scale development to connotative development. These new changes together constitute the new normal of higher education.

With the formation of the new normal of higher education, colleges and universities must set up the consciousness of market competition and the crisis of survival of the fittest. The major offered by colleges and universities should actively meet the needs of the industry, adhere to the demand orientation [3], reasonable positioning, through the expansion of service

capacity and enhance the contribution to achieve the depth of integration with the economy and society. In this paper, the philosophy of education is demand traction, engineering application, achievement oriented, and innovation. Training, curriculum, teaching objectives and graduation ability, fully consider the characteristics of regional industry demand. So as to form the interaction among industry post chain, ability chain, and course chain.

## II. TO MEET THE NEEDS OF INDUSTRY AND REALIZE THE DOCKING OF CAPABILITY CHAIN AND POST CHAIN

“The industrialization of society has led to the industrialization of social production. In the era of industrialization, higher education began to develop from elite education to popular education, and the popularization of higher education led to the differentiation of the types of education.” The cultivation of applied talents is a new mode of talent training to adapt to the change of this situation. Applied colleges and universities, as school subject, need to shift the orientation of running schools to local and applied types, the personnel training goal to applied and compound talents, training mode to enterprise cooperation, the discipline structure to support and guide the development of local industries, the teaching staff to the quality of “double teachers and dual abilities”, and the curriculum construction to practical application [4]. According to the requirements of engineering education accreditation, the objectives of personnel training must be reflected in the following points:

(1) The training objectives need to conform to the orientation of the school and meet the needs of social and economic development.

(2) The training goal needs to reflect the graduates’ achievements in social and professional fields in about five years.

(3) The degree of achievement of training objectives should be assessed and revised periodically, and industry and entrepreneur assessment and revision.

Taking the applied talents of electronic information specialty as an example, the job chain mainly comes from enterprises engaged in information technology development, equipment, product development and production, as well as information services. These enterprises have different demand for talents, such as enterprises engaged in product development, more emphasis on engineering application ability, and

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information services may focus on team building, language expression and other capabilities. The ability chain that the enterprise should have to the graduates is composed of ability chain. Industry employment target is professional graduates. The essence of professional training is to serve the development of the industry, and its focus is to provide the ability to adapt to the industry position. This requires the industry chain and capacity chain to achieve docking, in order to achieve the following purposes:

(1) The talent demand of electronic information industry chain is different, and the demand of students is diversified, and the training mode of all kinds of applied talents with hierarchical cultivation is realized. Through the flexible setting of professional direction, so that the training of students suitable for industry chain.

(2) It can quickly respond to changes in the electronic information industry, new knowledge and new technologies involved in emerging industries, such as elective courses in electronic information specialty, offering a series of courses on mobile internet.

Professional personnel training objectives should be implemented through personnel training programs and

curriculum system. Therefore, professional and industry enterprises jointly set up professional teaching committee. Invite enterprises, technical personnel, graduates and industry association leaders to participate in the formulation and revision of talent training program. Professional guidance seminars should be held regularly or irregularly. At the same time, the investigation of related enterprises should be strengthened to reach the following consensus:

(1) Clear the demand for professional talents in enterprise, establish the general ability and professional ability required by job responsibilities, as shown in table 1.

(2) Clear the objectives of personnel training and core competence requirements, establish the relationship between training objectives and core competencies, as shown in table 2.

(3) The requirements of the training objectives are embodied in the specific link of the talent training program, and the mapping relationship between the curriculum and the above core competencies is established, as shown in table 3. The 3-B in Table 3 refers to basic theories, basic knowledge and basic skills.

TABLE I. CAPACITY ANALYSIS OF REPRESENTATIVE JOBS

Representative work		Responsibilities required	Tasks required
Position 1	General ability		
	Professional ability		
Position 2	General ability		
	Professional ability		
...	General ability		
	Professional ability		

TABLE II. COMPARATIVE ANALYSIS OF TRAINING OBJECTIVES AND CORE COMPETENCIES

Training objectives Core competencies	Policy for education	3-B requirements	Service oriented	Talent type
Ability				
Ability				
Ability				
...				

TABLE III. COMPARATIVE ANALYSIS OF CURRICULUM CHAIN AND COMPETENCE CHAIN

Curriculum Ability	Course 1	Course 2	Course 3	...
Ability 1				
Ability 2				
Ability 3				
...				

### III. THE LINK BETWEEN CURRICULUM CHAIN AND COMPETENCE CHAIN

Curriculum chain is based on the goal of personnel training, the ability chain as the main content. Clear the supply and demand network within the curriculum system, the chain of courses linked to the characteristics of the course group. As the node of curriculum chain, curriculum is formed by multiple nodes to cultivate the value chain of talents, and ultimately realize the overall training goal of knowledge, ability and quality of curriculum system. The link between curriculum chain and capability chain [5] is mainly embodied in the following four aspects:

(1) Clear the supply and demand network within the curriculum system. According to the supply and demand network to deal with the relationship between a course, other courses and teachers, such as sorting out the internal order of the curriculum system.

(2) Through the curriculum chain to achieve the close link among curriculum objectives, curriculum content and curriculum evaluation. Analysis of each course and its teaching links should reflect what knowledge and ability. Teachers

should determine teaching objectives and directions accordingly.

(3) The course should serve a node in the capability chain. The courses which are irrelevant or not linked to the ability chain should not be added into the courses. And ability should ensure the scientificity of curriculum setting.

(4) Establish a clear mapping relationship between the course chain and the capability chain. Each ability in the ability chain needs explicit curriculum to support. Each course chain should have a definite contribution to the realization of the capability chain, as shown in table 3.

### IV. CONSTRUCTION OF THREE CHAIN DOCKING QUALITY MONITORING AND DIAGNOSIS SYSTEM

Three link training system of curriculum, ability and industry is not an isolated system. The curriculum system is influenced by various external factors and serves the goal of personnel training. Feedback control mechanism consists of feedforward control, process control and feedback control [6]. And then form a complete set of data analysis from plan to process to result. The quality monitoring feedback system is shown in Fig. 1.

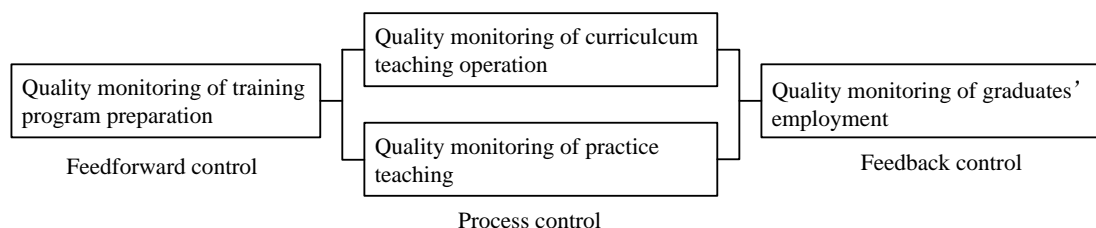


Fig. 1. Quality monitoring feedback system

### V. CONCLUSION

Taking the industry demand as the guidance, the training unit, the enterprise technical personnel and the industry experts jointly formulate the professional talent training program to achieve dynamic optimization and adjustment of curriculum system. So that the professional curriculum chain, ability chain and post chain formed close docking. Make the professional education and industry development meet the transformation and upgrading of industrial transformation.

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