

Construction of the Talent Training System in Colleges and Universities with Industry Characteristics under the Background of "Double First-Class"

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Abstract

Under the background of "Double First-Class", the talent training of colleges and universities with industry characteristics serves the needs of the industry and the country. In this paper, the system construction of talent training should be based on the construction of discipline system, curriculum system, practical innovation ability, teacher team construction, teaching material construction, teaching The six aspects of quality evaluation standards and evaluation are systematically discussed, and the construction paths and methods of talent training systems in universities with industry characteristics under the background of "double first-class" are systematically expounded.

Keywords

"Double First-Class"; Universities with Industry Characteristics; Talent Training.

1. Introduction

In order to effectively improve the development level of higher education in China, enhance the country's core competitiveness in key areas, and lay the foundation for long-term education development, since 2015, for the construction of "double first-class" colleges and universities, the state has released the Overall Plan to Promote the Construction of World-class Universities and First-class Disciplines, Implementation Measures for Coordinated Promotion of the Construction of World-class Universities and First-class Disciplines (Interim) , and On the Acceleration of "Double First-Class" Colleges and Universities. Guiding Opinions on Construction and other documents, clearly put forward to promote the construction of first-class disciplines to promote the construction of world-class universities.

Industry-specific colleges and universities are positioned as "relying on the industry and developing by serving the industry". It has significant industry school-running characteristics and outstanding discipline cluster advantages, cultivate a large number of outstanding talents through the integration of production and education, and achieve many leading scientific and technological achievements through school-enterprise cooperation. It has made outstanding contributions to national economic and social development and industrial transformation and upgrading [1]. As an important part of the "Double First-Class" construction and the cradle of talents for industry construction, universities with industry characteristics are endowed with higher expectations and important missions to realize the connotative development of higher education and support the high-quality development of the industry. The connotation of talent training in colleges and universities with industry characteristics is to cultivate people by virtue. The educational purpose of morality and talent cultivation in colleges and universities is to integrate value shaping, knowledge imparting and ability training, so as to cultivate scientific and technological elites and talents with correct values. The report of the 19th National

Congress of the Communist Party of China clearly stated that by 2035, my country will rank among the forefront of innovative countries in the world. Therefore, it is urgent to train a large number of talents with both political integrity and ability in industry and universities to lead the development of an innovative country and realize the grand strategic goals of the country and a prosperous and rejuvenated China.

In 2017, the concept of "new engineering" was put forward, aiming at the majors of emerging industries, with the Internet and industrial intelligence as the core, including cloud computing, big data, blockchain, artificial intelligence, virtual reality, intelligent science and technology and other related engineering majors. [2]. The construction of "new engineering" takes the integration of production and education as the carrier, comprehensively reforms engineering majors, and forms a new paradigm of talent training with interdisciplinary, co-construction, sharing, and collaborative innovation.

In April 2019, the "Six Excellences and One Top-notch" plan 2.0 was launched to develop new engineering, new medical, new agricultural, and new liberal arts, and promote a 'quality revolution' in colleges and universities across the country." In 2019, the national "Double Ten Thousand Plan" proposed to implement first-class professional construction, build 10,000 national-level first-class undergraduate majors and 10,000 provincial-level first-class undergraduate majors, which will be completed in three years [3]. Director Wu Yan said that the construction of "double first-class" universities should be Take the lead in building first-class majors, and application-oriented undergraduate colleges should strive to build first-class majors in combination with school-running characteristics. The development of majors should be truly implemented into connotation construction, and a new mechanism for all-round and whole-process collaborative education should be developed to promote the construction of a talent training system [4].

2. The Foundation of Strong Foundation-Strengthening the Construction of Discipline System

The fundamental task of colleges and universities is to implement personnel training, and the construction of a high-level discipline system supports the development of high-quality personnel training in colleges and universities. At present, the demand for science and technology and the development of social economy are rapid. Industry colleges and universities should closely focus on the development of frontier fields of science and technology, promote the cross-integration of basic disciplines and applied disciplines, vigorously improve the research and development capabilities of scientific and technological research teams, and strengthen the research and development capabilities of innovative, systematic, Support for leading research to promote discipline construction, optimize university discipline clusters, integrate majors, establish and improve the dynamic adjustment mechanism of disciplines and majors, implement innovation-driven discipline development strategies, promote industry-university-research collaboration and win-win, and integrate internal and external resources to promote discipline construction Landed to enhance the ability to serve local social development. Promote the cultivation of innovative, applied and compound talents with the development of discipline construction, promote the quality of talent training in colleges and universities, and improve the level of professional construction.

The "Double First-Class" Construction Effectiveness Evaluation Method (Trial) pointed out that the discipline effectiveness evaluation system is an important means to promote the connotative development of colleges and universities. The development of first-class disciplines and the cultivation of first-class talents support each other. Through discipline construction, the status of colleges and universities in the education system or in the industry is enhanced. The quality system of first-class talents cultivation plays a role in promoting the

construction of first-class disciplines, thereby promoting the development of industry-specific colleges and universities in the industry. The discipline construction presents certain characteristics of professional personnel training, which lays a solid foundation for the construction of high-quality personnel training system in colleges and universities. The connotative development of higher education must adhere to the discipline-oriented, promote the construction of a sustainable development of discipline system and personnel training system, through the construction of advantageous disciplines and innovative personnel training, so that higher education will transform from large-scale expansion to quality improvement, through the internal structure of colleges and universities. Optimize, reform and innovate systems and mechanisms, maximize the development potential of colleges and universities, cultivate outstanding talents who can adapt to high-quality development, and inherit the functions of colleges and universities for talent training, scientific research, social services, and cultural innovation.

Under the background of "Double First-Class", discipline construction is the basis for high-quality talent training. Through the continuous improvement of academic research and scientific research results, it provides strong support for talent innovation and training. The complementary improvement of scientific research resources enables disciplines to form discipline clusters in colleges and universities, and play a role in guiding development in the industry, which can effectively promote the innovative development and vitality of colleges and universities in the industry. At the same time, it can in turn further strengthen discipline construction and lead other disciplines. The development of the industry has enabled industry colleges and universities to improve the quality of competition under the background of the existing discipline system and "double first-class".

3. The Way to Consolidate the Basics-Strengthen the Reform and Construction of the Curriculum System

The core of talent training in colleges and universities is the setting of curriculum system, and the setting of curriculum system is related to the direction and mechanism of talent training. The curriculum settings of colleges and universities with industry characteristics should be oriented to the needs of the industry, accurately provide talents with matching knowledge and skills for the industry, focus on building a curriculum structure system and framework group centered on this field and this system, strengthen the organic connection between characteristic courses and subject courses, and improve The employability of graduates. The basis for the realization of the professional talent training goals of colleges and universities with industry characteristics is the setting of curriculum system, the construction of curriculum connotation, and the integration of characteristic resources.

In August 2019, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued Several Opinions on Deepening the Reform and Innovation of Ideological and Political Theory Courses in Schools in the New Era, which clarified that "ideological and political education should run through the entire process of talent training" and "comprehensively promote Ideological and Political Construction of College Curriculum". In May 2020, the Ministry of Education issued the Guidelines for the Ideological and Political Construction of Colleges and Universities, which gave guidance on how to carry out curriculum ideological and political courses in different disciplines [5].

The purpose of high-quality personnel training in colleges and universities is to adhere to "serving the people, serving the Communist Party of China in governing the country, serving the consolidation and development of the socialist system with Chinese characteristics, and serving the reform and opening up and socialist modernization construction" [5]. The quality of talent training in colleges and universities determines the future scientific and technological

development of the country and the future of the nation. Therefore, it is necessary to vigorously improve the teaching ability of "Ideological and Political Theories teaching in All Courses", based on the cultivation and conscious practice of socialist core values, and exert the value of "Ideological and Political Theories teaching in All Courses" to shape the correct outlook on life, values and world outlook of college students. Integrate ideological and political courses with ideological and political courses organically, integrate Marxist theory, Mao Zedong Thought and the theoretical system of socialism with Chinese characteristics into professional courses, and practice the unity of political, educational and ideological courses. It enables students to continuously strengthen their "belief in Marxism, belief in socialism with Chinese characteristics, and confidence in the Chinese dream of the great rejuvenation of the Chinese nation" in the study of each course [6].

As an overall and systematic work, the ideological and political construction of courses requires the coordination and cooperation of multiple departments and disciplines to form a good atmosphere for co-management of "big ideological and political". At the same time, it is necessary to establish an applicable and effective assessment evaluation mechanism, based on the actual situation of colleges and universities in the industry, we should promote the construction of the ideological and political system of the curriculum, identify the school's talent training orientation, realize the ideological and political system that is coordinated with the school's positioning and the layout of disciplines and majors, and strive to realize the curriculum ideological and political education from ubiquity to quality, characteristic and systematic development. Figure 1 shows the construction diagram of the curriculum system.

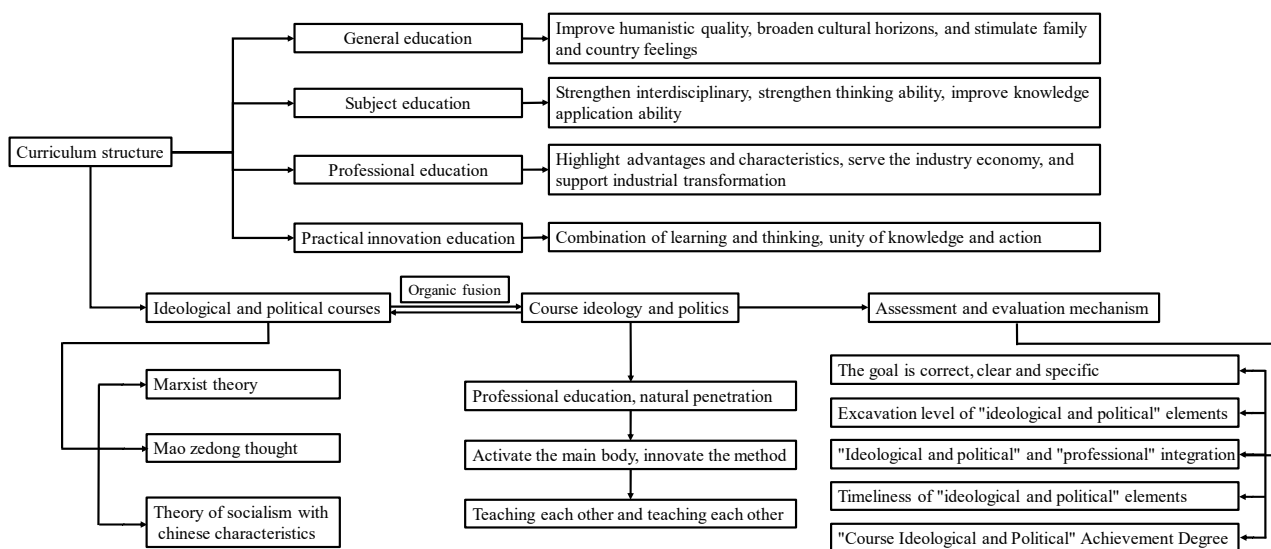


Figure 1. Curriculum System Construction

4. The Way of Excellent Governance --Strengthening the Cultivation of Practical Innovation Ability

Industry-specific colleges and universities are positioned to cultivate applied talents with strong professional abilities for the industry. The trained talents need to have a solid and abundant theoretical foundation and the ability to solve practical problems in the development of the industry. For this purpose, industry-specific colleges and universities mostly aim at the industry development needs, build a practical teaching system that integrates practicality, systematisms and openness, in order to cultivate students' practical innovation ability. The overall improvement of innovation ability depends on the development of five aspects: subjectivity, physical strength and intelligence, talent, social relations and individuality of

personnel training [7]. Innovative talents, as the training objects and achievements of colleges and universities with industry characteristics, is required a deep mastery of basic professional fundamentals and essential skills, possess the innovative spirit and innovative ability required by the industry in the context of the development of the new era. Industry-specific colleges and universities should guide, encourage and support innovative talents to go deep into the industry field. By strengthening their own practical experience, cultivate their sense of innovation, fighting spirit and sense of responsibility and mission, combining personal destiny with the development of the industry, grow and move forward together.

Compared with other colleges and universities, industry-specific colleges and universities have higher requirements for the cultivation of students' practical innovation ability, cultivate practical innovation capabilities through practical education and innovation education through school-enterprise cooperation. pay more attention to the cultivation of innovative and application-oriented talents for the development of the industry, and more emphasis on the close combination of theoretical teaching and practical teaching. Innovation comes from practice, practice promotes innovation, and the two complement each other. Innovation ability includes academic innovation ability, practical innovation ability and innovation and entrepreneurship ability. In this regard, we must adhere to the integration of science and education, combine scientific research with curriculum teaching, bring the exploration of the frontiers of science and technology into teaching organization activities to cultivate students' innovative spirit and critical thinking. Secondly, fully relying on the advantages of the industry, in-depth cooperation between production and education, the combination of internship practice, innovation and entrepreneurship, graduation thesis and course study, etc., to build a high-quality talent training system with a "three-in-one" situation of classroom teaching, professional practice and innovation and entrepreneurship.

5. The Soul of Educating People --Strengthening the Construction of Teaching Staff

In October 2015, the State Council issued the Overall Plan for Promoting the Construction of World-Class Universities and Disciplines. The scheme clarifies the main construction tasks of building a first-class faculty as a world-class university and first-class discipline. In the construction of "double first-class" colleges and universities, the construction of first-class teachers is of great significance for improving the development level of our country's higher education, enhancing the country's core competitiveness, and laying the foundation for long-term development [8].

At present, there are phenomena such as difficulties in talent introduction, emphasis on scientific research rather than teaching, emphasis on introduction rather than training, and imperfect teachers' career development planning and institutional guarantees. The main reason is that the self-construction of all parties is not enough, the college lacks standardized and continuous training for the training of young teachers; Young teachers are not motivated to invest in teaching; therefore, in order to strengthen the construction of college teachers, it is necessary to broaden the talent recruitment channels, speed up the pace of introduction of outstanding talents and teams, and fully mobilize the enthusiasm of outstanding talents. Increase the investment in various scientific research and teaching support projects, strengthen the construction of teaching and scientific research teams, promote the integration of advantageous disciplines and key disciplines, integrate discipline resources, strive to build an excellent innovation team with broad academic vision and sustainable development; strengthen the mutual assistance and mutual assistance of the old, middle-aged and young people in teaching, and provide young teachers with experienced professors as instructors to

improve their teaching ability and scientific research skills; Figure 2 shows the elements of teacher team construction.

As the main body of preaching, teaching, solving doubts and leading the development of students, teachers have a position of great responsibility and glorious mission. The construction of teaching staff in colleges and universities can effectively ensure the goal orientation of teaching and scientific research through excellent talent support plans and the integration and distribution of teaching staff, so as to effectively improve the quality of talent training in schools. When setting up a teaching team, the orientation of talent training in colleges and universities with industry characteristics and the clear educational goals are the basis for the construction of the entire teaching system and teaching staff. At the same time, experts or professors of the discipline should take the lead, experienced teachers should drive new teachers, and the work quality of the whole teaching team should be improved through the teaching of knowledge and experience.

Teachers should improve the ability of ideological and political construction of courses. On the basis of in-depth interpretation of the teaching content of professional courses and teaching resources of professional courses, improve the ideological and political design and teaching ability of courses, actively explore the reform and innovation of ideological and political construction of courses, strive to broaden the ideological and political construction of courses. form a teaching reform model of "course goal setting→content design→course implementation→course evaluation→improvement and improvement". Through students' learning evaluation and feedback, and teachers' teaching evaluation and feedback, realize the continuous improvement of curriculum ideological and political construction, and the unity of teaching and education is realized in the continuous improvement of teaching ability and level.

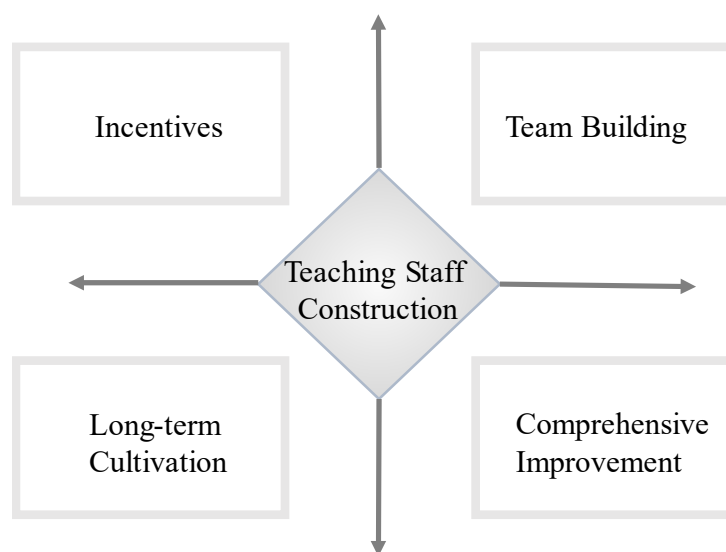


Figure 2. Elements of teaching staff construction

6. Soul Casting Project --Strengthening the Reform and Construction of Teaching Materials

General Secretary Xi Jinping emphasized that curriculum materials should cultivate the foundation and casting the soul, and enlighten wisdom. To build "foundation" is to build a good Chinese background, and to build "souls" is to implant red genes, enable students to achieve a high degree of unity of loving the party, patriotism and socialism. Since July 2017, the National Textbook Committee has been formally established. The Party Central Committee and the State Council have carried out a new top-level design and institutional design for the teaching material construction leadership system, and organized the release of the National Teaching

Materials Construction Plan for Universities, Primary and Secondary Schools (2019-2022), "Administrative Measures for Textbooks in Ordinary Colleges and Universities", "Administrative Measures for National Key Research Bases for Textbook Construction", "Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era into Course Textbooks", "Party Leadership" related content into university, primary and secondary school curriculum textbooks[9]. The construction of teaching materials is an important symbol to measure the level of teachers, teaching and scientific research in Colleges and universities. The quality of the selection and compilation of teaching materials directly affects the quality of talent training. Education commissions and colleges at all levels are actively developing high-quality undergraduate courses, teaching materials, and courseware, which are used to support the professional development and construction of colleges and universities, practice innovative education reform, and the quality of talent training. The construction of high-quality teaching materials is a long-term strategic requirement of national education, it is also a development requirement for universities to improve the quality of personnel training and serve the society. Textbooks are the basic teaching tools. The construction of textbooks promotes the construction of courses, thereby enhancing the development of professional construction; the construction of teaching materials promotes the construction of teachers' own abilities. High-quality teaching materials require editors to systematically master the theory and frontier development of disciplines. Therefore, the construction of teaching materials will definitely promote teachers to improve their knowledge reserves and strengthen theoretical construction. The construction of teaching materials will inevitably undergo a process of quantitative change to qualitative change. In the process, there are few high-quality teaching materials, which are difficult to meet the requirements of higher education development.; the content of professional basic course textbooks is abstract and difficult, lacking the support of diagrams, table annotations and actual cases; high-quality professional course materials are still translated versions of foreign advanced technology, lack of systematic, forward-looking good teaching materials; The object-oriented positioning of teaching materials is not accurate., and some textbooks are not considered from the perspective of the grade level of the object of use, which is too difficult and complicated in content. Some contents are simple and do not reach the depth of knowledge that the course should have. Therefore, the construction of high-quality textbooks must focus on the editors, the organization and presentation of textbook content, etc. Experienced editors can accurately grasp the degree of difficulty of teaching knowledge points and the audience, and combine knowledge points with scientific and technological frontiers or engineering examples, which can effectively improve the quality and purpose of teaching materials. The content of the teaching materials should be closely linked to the personnel training goals and subject knowledge system. It should be logically clear and the language clear to clarify the knowledge points, and combined with the latest research results to reflect the cutting-edge teaching materials. The presentation of the teaching materials should be accurate and authoritative, with pictures and texts, and fully equipped with supporting resources such as exercises and design examples. The construction of high-quality teaching materials can well promote professional construction and teaching reform, and promote the cultivation of high-quality applied undergraduate talents.

7. The Root of Establishing a School--Strengthening Teaching Quality Evaluation Standards and Evaluation

The essence of the school is to cultivate people with morality and to take students as the center, and its quality standards are students' knowledge mastery, ability development, and quality improvement. The connotation of teaching quality is the level of students' knowledge mastery, ability development level, and quality improvement level. The "National Standard for Teaching

Quality of Undergraduate Majors in General Colleges and Universities" is a quality assurance standard. The "National Standard" pays more attention to the quality of goals, tasks, courses, content, and operation, but more importantly, the quality of teaching must ultimately be evaluated by the society, that is, the evaluation criteria of the employer. The student-centered evaluation standard means that teaching quality evaluation, professional quality evaluation and course quality evaluation, and teaching quality evaluation are based on training effect and teaching effect., or it is based on the evaluation and evaluation indicators centered on students' learning effects, students' physical and mental development, and students' development quality. The 40 Articles of Higher Education in the New Era put forward "to improve the teaching quality of higher education, highlight the student-centered, output-oriented and continuously improve the quality supervision and evaluation system of colleges and universities, and achieve remarkable results in the construction of university quality culture". At present, from OBE (outcome-based education, referred to as OBE) to result-oriented education, under the guidance of OBE concept, from background evaluation (Context), input evaluation (Input), process evaluation (Process), result evaluation (Product) Four dimensions, namely the CIPP model, reconstruct the teaching quality evaluation system in colleges and universities [10]. Table 1 shows the teaching quality evaluation system. The teaching quality evaluation system based on the OBE concept should aim at cultivating students' abilities, based on the industry-specific orientation of universities and the characteristics of talent training, and effectively improve the quality of teaching and the training of students' abilities. At the management level, it is necessary to uniformly coordinate and design talent training programs at the top level with the result-oriented approach. At the teacher level, to organize teaching activities to improve the comprehensive quality of students, and to build an evaluation system from the perspectives of all parties responsible. The evaluation of teaching quality in colleges and universities with industry characteristics should highlight the characteristics of industry education and industry-university cooperation, enhance the industry's recognition of college personnel training. For the evaluation of resources invested in colleges and universities, we should focus on the evaluation of indicators such as scientific research output, faculty ratio, and funding investment; for the implementation process of the talent training plan, attention should be paid to the course teaching methods, course content, the degree of students' learning content and skill mastery, and the degree of matching with the industry's skill needs.

Table 1. Teaching quality evaluation system

| Evaluation principles | Evaluation elements | Evaluation indicators |
|--|----------------------------|--|
| Overall evaluation of the layout | Teaching background | For the subject and object of the evaluation, conduct the evaluation under a specific background or industry; |
| Dynamic evaluation of the whole process | Resource configuration | Evaluate the invested teachers, supporting funds, equipment and facilities, software resources, etc.; |
| Based on the characteristics of running a school, focusing on practicality | Process supervision | Evaluate teachers' teaching methods, teaching content, and students' learning interest and knowledge application ability mastery; |
| Student-centered and output-oriented | Result feedback | Evaluate the semester assessment and annual assessment of teaching activities, and evaluate the skills of students for employers to feed back into the design of talent training programs; |

8. Conclusion

Under the background of "Double First-Class", the cultivation of talents in colleges and universities with industry characteristics serves the needs of the industry and the country, to

supports economic transformation and accelerated industrial upgrading. The construction of the talent training system will systematically and comprehensively describe the integration of various elements in the process of college student training, lead the curriculum construction and teacher team construction with discipline construction, promote the reform of teaching materials and improve the teaching quality evaluation standards, so as to strengthen the cultivation of talents in colleges and universities with industry characteristics quality.

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