

Integration of Industry and Education in Higher Vocational Education under Ecological Metaphor Methodology, Systematic Construction

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Abstract. China puts forward higher requirements for vocational education reform, the transformation and development of colleges and universities, and the training of applied talents. This paper to return to the ecological metaphor of higher vocational education fusion system, based on the "analogy source selection-metaphor mapping" metaphor process perspective, tracing the theory of logic starting point, for higher vocational education fusion system components deconstruction and the construction of higher vocational education fusion system.

Keywords: Ecological Metaphor; Higher Vocational Education; Industry-Education Integration; School-Enterprise Cooperation.

1. Introduction

In the research field of organization theory, scholars use some natural phenomena to metaphorically explain the characteristics of certain organizational phenomena or the essence of organizational structure, and this method improves the dialogue between theory and practice. Ecological metaphor has a long history in the study of organizational theory[1], Ecological metaphor has an important enlightenment significance to the more and more complex higher vocational education system today. This paper returns to the ecological source of the metaphor of the industry-education integration system of higher vocational education, based on the metaphorical process perspective of "analogy source selection- -metaphor map establishment", and describes the static element deconstruction and dynamic functional mechanism of the industry-education integration system of higher vocational education. From the perspective of static element composition, the higher vocational education integration system is a complex ecosystem with geographical space and Internet virtual space, and the fundamental task. From the dynamic function mechanism, the higher vocational education integration system regulates the government, industry, enterprise, and has the material circulation, energy flow and information transfer.

2. Tracing the Theoretical Logical Starting Point of the Industry-Education Integration System of Higher Vocational Education

The clearly structured "analogy source" is the premise of metaphor mapping. In the lack of insight into the structural function and development law of the "analogy source", it is often difficult to recognize the unknown and fuzzy "analogy spring" through the "analogy source" to go deep.[10]

Therefore, in the study of higher vocational education and the system theory of the integration of industry and education, the discussion of the nature of the "ecosystem" is insufficient, and the discussion of the mapping conditions in the process of developing the metaphor is relatively simple and static, and the grasp of the analogy similarity is more limited. Many scholars have compared the two-dimensional "environment-ecology" framework of the ecosystem with the social ecosystem, which has also formed the mainstream analysis paradigm of "environment-subject". This paper forms the analysis framework of "environment-subject-characteristic-object" on the basis of "environment-subject". The integration system of industry and education in higher vocational education is a complex adaptation system like the natural ecosystem. However, because the integration system of industry

and education in higher vocational education is a kind of "artificial ecosystem", it has many characteristics of social and economic systems, and the differences from the natural ecosystem are also reflected in many aspects. Table 1 compares the different points of the two types of systems one by one.[11]

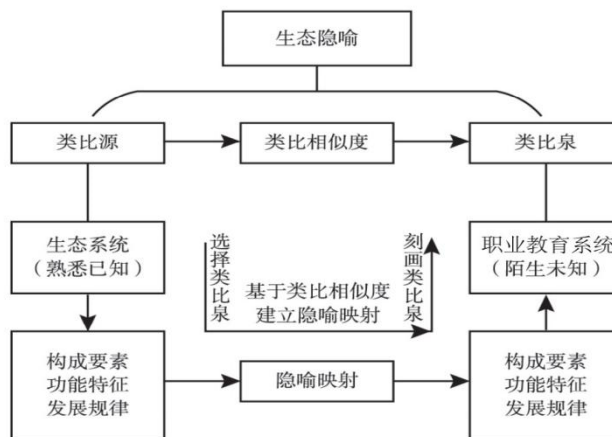


Figure 1. The cognitive process of higher vocational education and industry-education integration system based on ecological metaphor

Table 1. Differences between natural ecosystem and higher vocational education and education

Contrast dimensions	natural ecosystem	Higher vocational education, industry-education integration system
environment	The environment of natural ecosystems is relatively static, with little variation over continuous time periods.	The external environment of the industry-education integration system of vocational education is static in the short term and in the continuous dynamic changes in the long term.
main body	The subject is mostly unconscious, passive, evolving through inheritance, variation, etc.	As the human subject, with the intellectual ability of logic, decision-making, planning and predicting the future, and can maintain its vitality through observation, learning, innovation, scientific research and other means.
characteristic	It belongs to a natural system, which is difficult to control, and the system regulates itself through natural selection.	Belong to the social system, forming a complex relationship network, the system with purpose and controllability.
objective	The purpose of systems in existence is to remain alive.	The purpose of the system existence is to cultivate talents, maintain or increase the productivity and innovation of the system.

3. The Deconstruction of the Industry-Education Integration System in Higher Vocational Education

As the carrying unit of biological populations in natural ecosystems, biological communities can be divided into different categories of rivers, lakes, grasslands, forests, marshes and deserts according to the different environmental characteristics and regions. The classification of biological communities is based on the natural geographical area, which is coupled between the population and the regional ecological environment and according to the different characteristics they present. However, for the industry-education integration system of higher vocational education, this paper separately divides it into a new community of the higher vocational education integration system (as shown in Table 2).

Table 2. Community Summary Results and Classification of the Industry-education Integration System in Higher Vocational Education

natural ecosystem		Higher vocational education, industry-education integration system	
community	Rivers, lakes, grasslands, forests, marshes, deserts, etc	Integration system of industry and education in higher vocational education	Talent training mode: the "double-body, modular" talent training mode, the talent training process of "integration of industry and education, alternating work and study, and full real training".
			Talent training plan: diversified talent training specifications, reconstruction of curriculum system, and effective docking of talent training plan with the requirements of local industries and enterprises.
			Double-qualified and double-energy teacher: external introduction and internal training.
			Campus and external practice and training base: on-campus training platform construction and off-campus training platform construction.
			Modular curriculum resources: "modularity" of vocational education curriculum and "modularity" of practical teaching links.

3.1 School-enterprise Cooperation to Reform the Talent Training Mode

1. Explore and gradually establish the "dual-body, modular" talent training mode. Through demand research, professional planning, talent training plan revision, according to the requirements of applied talent training target revision and improve the talent training plan, strengthen the reform of curriculum system, build practice teaching system, to build with enterprise spirit and professional quality of applied talent has been clear about the direction, walked out of a way with its own characteristics. Formed a "dual-body, modular" talent training mode, students, prospective employees two identities.

2. Build a talent training process of "integrating industry and education, alternating work and study, and fully real training". The university and the enterprise jointly build the training base inside and outside the school, carry out the occupation modular division of labor according to the applied talent training program, according to the professional standards of the industry association, the procurement, management, service, information, marketing and other module processes of industry and education integration, work and study alternation, and full real training in the campus and off-campus training base. As it is modular, each project learns and evaluates independently, and finally the whole module is integrated to achieve the goal of forming an application-oriented talent training program. In the last year, we will carry out a fully true in-post internship, and finally achieve the best matching between talent training and job demand.

(2) School-enterprise cooperation to jointly revise and implement the talent training plan

1. Diversified specifications of talent training. Based on the diversified needs of the society for talents and combined with the extensive types of students in the university, the project team establishes the connection of five-year, junior college and applied undergraduate courses on the basis of the diversification of talent training specifications, so as to achieve the synchronous improvement of knowledge, quality, ability and skill level with the improvement of academic qualifications.

2. Refactoring of the curriculum system. The reset of the talent training program for the application-oriented talent training needs the reconstruction of the curriculum system.

3. Effective docking of the talent training program with the requirements of local industries and enterprises. In view of the changes in the external environment of educational subjects, relevant courses are set up scientifically, especially the industry associations, as the intermediary of the government and enterprises, to grasp the industry demand information and promote the adaptation of supply and demand between schools and enterprises. Find the right positioning of talent training objectives, understand the trend of

industry development, understand the basic characteristics of the industry, be familiar with the enterprise, proficient in the occupation.

(3) School-enterprise cooperation to cultivate double-qualified and double-energy teachers

The first is to clarify the structure characteristics, connotation characteristic and management characteristic of "double teacher and double energy" teacher team construction; the second is to establish and improve the policy of "employment and award evaluation"; the third is to establish the integration of industry and education to promote teachers to practice and feed the teaching effectively; and to jointly guide students' graduation design.

(4) School-enterprise cooperation to build practice and training bases inside and outside the school

1. Construction of the on-campus practical training platform. Through the operation of the training platform, the professional construction and curriculum system design are promoted, the teacher structure is improved, the teaching quality is improved, the market adaptability of the major is strengthened, the transformation of industry, university-research results is accelerated, and the seamless connection between talent training and employment demand is realized. Finally, the professional construction goal of "human and financial integration, industry, university and research integration, mentoring interaction" is realized. Based on the positioning of "function diversification, layout and production, environment and enterprise, and market-oriented operation" and the design idea of "front store and back factory".

2. Construction of the off-campus practical training platform. Taking the docking industry as the starting point, students will be brought into the scene of full and real customer service, realize the real scene of on-campus internship simulation to off-campus internship, and maximize the cultivation of students' customer service ability, practical operation ability, and the ability to solve work difficulties. With the help of the enterprise off-campus training base, and the campus training base to form a complementary.

(5) School-enterprise cooperation to develop modular curriculum resources

School-enterprise cooperation to jointly develop special textbooks for school-enterprise cooperation. The professional curriculum construction is based on the professional ability standard, decomposes the professional ability according to the industry standard, operates according to the skills, and carries out the modular division around the work of the enterprise post. The curriculum system is divided into several independent teaching modules and units to meet the requirements of flexible teaching. After students master each module, all modules are linked to form a comprehensive skills.

3.2 The Construction of Industry-education Integration System in Higher Vocational Education

(1) Building a cooperative community between the government, the industry, higher vocational colleges and enterprises

To build a cooperative community of government, industry, higher vocational colleges and enterprises, it is necessary to set up a joint leading group of local government application, industry associations, higher vocational colleges and enterprises to make overall planning and coordinate the strategic and tactical work of the training of application-oriented talents. The Applied Systems Science Theory, Starting from the "element-structure-function", The elements of building a cooperative community between local governments, industry associations, vocational colleges and enterprises, To form a higher vocational colleges as the center, Local governments, industry associations, and enterprises form a marginal "center-edge" structure, Give full play to the functions of government overall planning, resource supply and condition guarantee; Industry association decision-making consultation, expert consultant, new industry trends, industry standards and other functions; The main battlefield of talent training in higher vocational colleges, the implementation of talent training program, the monitoring of the whole teaching process, the application-oriented teaching quality assurance and other functions; Enterprises to provide real combat places, enterprise mentor, joint plan formulation, enterprise projects and other functions. Through the construction of vocational education groups, industrial colleges, enterprise colleges, workshops, practice and training

bases inside and outside the school, apprenticeship workshops and other ways, to form the main carrier of the integration of industry and education. The government, industry, higher vocational colleges and enterprise cooperation community also need to seek common ground while shelving differences and reconcile the interests of the four subjects. The government mainly considers to provide sustainable talent guarantee for local economic and social development, the research project that the industry mainly considers the development of industries needs intellectual support of universities, the important functions of universities are to train talents and serve local governments, and enterprises mainly consider sustainable talents through cooperation and to fulfill social responsibilities. Therefore, the ultimate common interest of the government, industry, higher vocational colleges and enterprise cooperation community is talents.

(2) Establish a market-oriented, student-centered school-enterprise cooperation interest-driven mechanism

The cultivation of applied talents should ultimately be tested by the market, etc. Therefore, the introduction of OBE concept, for the supply of talent universities and the demand of enterprises, both sides focus on target results and market-oriented orientation, with pragmatic color. It is necessary to reconcile the interests and objectives of the school-enterprise cooperation. Traditionally, it is believed that the ultimate goal of enterprises is to maximize profits, and the school-enterprise cooperation is to rely on trainee students to reduce costs, in order to solve the shortage of human resources, and for the utilitarian purposes such as talent reserve. School-enterprise cooperation established for a utilitarian purpose will inevitably lead to "shallow cooperation". School-enterprise cooperation should be a sustainable "deep cooperation", transforming the goal of profit maximization into a sustainable development goal based on the fulfillment of corporate social responsibility. For example, intercontinental Hotel Management Group has established hundreds of "talent colleges" around the world, providing scholarships and grants for students and teachers for schools, bringing corporate training courses to schools, and inviting school teachers and students to participate in corporate cultural activities, social activities and other all-round and in-depth cooperation. Therefore, school-enterprise cooperation should be based on long-term development, and school-enterprise cooperation should increase the content of cooperation, not only the internship link. In admissions propaganda link can join the enterprise in talent training case sharing, in the entrance link can take students and parents to visit cooperative enterprises, in the course teaching link into enterprise trainee internship, students and employees to participate in vocational skills competition, comprehensive increase the interaction, trust, the enterprise management problems in the form of horizontal subject to the school, college teachers with academic attitude of knowledge to apply the theory to solve the practical problems. The school combines theory with practice, and the enterprise combines practice with theory. In a word, based on the market-oriented and student center, we should reverse design the talent training program for students during the school period, and both the school and the enterprise should carry out sustainable multi-directional "deep cooperation".

(3) Practice the government, enterprise, industry, university, research and application system under the guidance of the new development concept

In the new stage of development, we will implement the new development concept of "innovation, coordination, green, openness and sharing", and promote the high-quality development of government, government, enterprises, industry, university, research and application. Innovation: the new scientific and technological revolution brings new opportunities to the training of applied talents; the theoretical development of the integration of industry and education provides the innovation source for the training of applied talents, and the university enterprise cooperative practice provides the innovation impetus for the training of applied talents. From the external environment to the internal environment, from theory to practice, the important role of innovation in the cultivation of applied talents is proposed. Coordination: school-enterprise cooperation is a multi-interest community, we need to coordinate the relationship between local government application, industry associations, higher vocational colleges, enterprises, parents, students, teachers, coordinate the relationship between school and society, coordinate the relationship between students' theory and

practice, and Germany. Green: any cooperative relationship needs to abide by the concept of man and nature, sustainable development, low carbon, energy conservation and environmental protection, students in the enterprise in school in addition to observing the rules and regulations of the school and the enterprise, respect the rules of nature. Only under the background of an ecological community, government, school and enterprises can play the purpose of sustainable applied talent training. Openness: The government, universities and enterprises themselves is an open system, but it is still necessary to strengthen the interaction and communication between local application-oriented universities and the same type of universities in other provinces, and with similar foreign universities. In the process of international exchanges, we should go out and introduce them, apply the advanced foreign educational concepts, learn from the mature experience of the integration of industry and education, and cultivate students' global vision and international vision. Sharing: In the process of school-enterprise cooperation between government and bank, it is necessary to constantly summarize and summarize the mature experience of industry-education integration into cases or models for promotion.

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