



# **Analysis on the construction of modern vocational education system under the guidance of system theory**

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**Abstract:** With the rapid economic development, as the main output base of practical talents, the teaching method of vocational education is attracting more and more attention. In the vocational education process, the vocational education must pay attention to the comprehensiveness, the vocational education system construction must pass through the rigorous analysis. In the context of vocational education reform, the goal of the reform is not to overthrow the traditional vocational education system and deny its teaching mode, but to promote the transition from the traditional education system to the modern system. Competition is the driving force for the construction of modern vocational education system, and the competition among vocational colleges and teachers is constantly pushing the vocational education system from administrative to market-oriented.

**Keywords:** System Theory; Vocational Education; system construction

According to the analysis of the current social demand for talents, we find that the state's demand for practical talents is increasing. In order to optimize the teaching quality of the vocational education and ensure the supply of practical talents, China's education department issued the outline of the national medium and long-term education reform and development plan (2012-2020), in which the vocational education clearly stated that, by 2020 at the latest, China's vocational education will have to develop in a systematic way. From the perspective of education as a whole, the vocational education covers a wide range of topics and industries. It is very difficult to achieve the goals of education reform and requires scientific planning and argumentation. Education is an important factor that determines the rise and fall of a nation. It is a long-term cause and reform should not be carried out blindly. In the process of educational reform, we must take science as the basis of reform, first set up the experimental unit, then push it to the society. In the course of this paper, the author analyzes the construction of modern vocational education system in China with the method of system theory, hoping to provide reference for the reform of vocational education in China.

## **1. Overview of system theory**

### **1.1 A holistic approach to systems analysis**

In the field of theoretical research, atomism is a theory opposite to system theory. It believes that the understanding of the whole can use the method of analysis to first study the function of each element, and then superimpose the function of elements, so as to realize the construction of the whole function. According to system theory, the function of a system is a new function that cannot be possessed by various elements in isolation. It is not a simple superposition or mechanical combination of functions that can be performed by various elements. Laszlo proposed in his research on system theory that the view of system theory is to treat the system as an integrated whole combined with subordinate components, and never treat the system as a mechanical aggregate of all parts in an isolated causal relationship. From this point can be areas of the, the system is to be connected with the several factors in the form of a certain structure of an organic whole with some special functions, this function is any elements of function, about the relationship between

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the elements and system study, we consider that factor is the foundation of the whole, the overall effect on restraining factors. The relation combination of elements will have a decisive effect on the overall function of the system. If the basic relation of each element is unchanged in the combination process, then the overall attribute of the system will not change. In order to understand the relationship between elements and system more intuitively, we can take the whole team as a team. In order to improve the overall strength of the team, members of the team will change alternately, but the overall tactical style of the team will not change.

## **1.2 Analysis of system structure**

Systems are nested, and each system can be broken down into smaller systems. Just like the human body, the human body is composed of various organs, which in turn are composed of various cells. Cells are the most basic unit of the human body's morphological structure and function. The number of cells in the human body amounts to several hundred thousand million, and these cells have differentiated into 274 kinds of functions. Cells with similar morphology and functionally related functions will be combined into a composition according to a certain structure of the interstitium, and the tissues can be united together to perform a certain function of the human body, and have certain morphological characteristics to form human organs. Different organs can also join together to complete a specific continuous physiological function, and then form a system. If the structure of the elements is different, the attributes of the system are also very different.

## **1.3 System function analysis**

Function refers to a kind of characteristic and effect that the system and external environment interact with each other. In the process of studying the system, the main purpose is to optimize the system function and obtain a better optimization effect. The embodiment of the function is closely related to the external environment. With different external environmental conditions, the functions displayed by the system may be greatly different, which leads to the same structure. Under the influence of environmental factors, the functions displayed will also be different. Similarly, in different environments, different structures may also show the same functions. Therefore, from this perspective, the relationship between function and structure can be understood as structure is the basis of function, and the performance of function must be realized by structure. Take a team as an example. The strength of a team cannot be judged solely on the quality of individual players, but on the basis of comprehensive technical and tactical cooperation between players. Optimization of the structure can optimize the overall function of the system and ultimately achieve the goal of improving the overall strength of the team.

## **2. The construction of modern vocational education system under the guidance of system theory**

From the analysis of the current implementation of vocational education, compared with developed countries, there are still many problems in the development of vocational education in China, leading to relatively low teaching quality. After years of efforts, China has made certain research achievements in vocational education, but due to the relatively short period of time, many problems remain unresolved, which is also the key factor affecting the improvement of vocational education teaching quality in China. UNESCO puts forward that system analysis is a scientific tool that can be applied to the current education system to make an overall analysis and find out the problems, so as to realize the construction of the education system.

### **2.1 The integrity of the system and the construction of the educational qualification framework system**

From the perspective of system theory, vocational education system is an integral part of the overall education system of knowledge. Compared with the general education system, vocational education is more complex. How to establish a scientific qualification framework system has become the key to the construction of the current vocational education system. China's education system reform clearly points out that it is necessary to establish a vocational and technical education system from the primary level to the senior level, equipped with industries, reasonably structured and able to communicate with ordinary education. However, after years of reform and development, China has not made substantive breakthroughs at present, and there are still many difficulties in the process of building the academic degree

system. The design of complete academic qualification framework should not only include the connection between academic qualifications, but also consider the recognition of credits. In order to achieve the ultimate goal of scientific construction, we can combine vocational training with vocational education on the basis of the experience of foreign developed countries and the actual situation in China.

## **2.2 The structural analysis of vocational education system**

In the vocational education system, the school-running system is an extremely critical component. In the implementation process of China's traditional vocational education, the school-running system of vocational education belongs to the office vocational education system, which is suitable for the state-owned economic system. With the continuous development of the society, the state-owned economy has begun to transition to the market economy, and the vocational education system of crude oil has been unable to meet the needs of the current social development. Take secondary vocational education as an example. In 2011, the number of students in private secondary vocational education only accounted for 12% of all secondary vocational school students. Private vocational colleges are not only small in scale, but also in terms of capital and source of students. From the analysis of the development of vocational education in various countries, it is found that modern vocational education is a market-oriented system in nature, and its school-running system will be affected by market-oriented factors. Australia, for example, has a total population of 22 million, but its vocational education system includes more than 5,000 private registered training institutions, both in number and scale. In China, public institutions in such aspects as scale, the faculty has the absolute advantage, vocational education system to achieve the overall function, need to start from the number, increased the number of vocational education colleges, in order to be able to achieve this goal, loosen the restriction in vocational education need country conditions, using policy, increase support to the private vocational colleges. The total population of China has reached 1.4 billion, but the number of vocational colleges is only more than 1,000. Compared with developed countries, there is a big gap in both quantity and scale.

## **2.3 Function analysis of vocational education system**

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In the process of constructing the vocational education system, the function orientation of the education system must be determined first, which is the foundation of the construction work. From the perspective of function, vocational education aims to cultivate excellent practical talents, thus solving the employment problem of labor force and constantly improving labor productivity. According to relevant national statistics, the main employment units of urban residents in China are all non-state-owned units. In 2016, the number of employed urban population in China was close to 450 million, of which state-owned enterprises accounted for just over 70 million, less than 20 percent, while non-state-owned enterprises accounted for more than 80 percent of the population. From the overall development trend analysis, with the decrease of the number of state-owned enterprises, the number of employees working in state-owned enterprises is also declining. Under the influence of market economy, the number of employees in non-state-owned enterprises is increasing. Compared with non-state-owned enterprises, state-owned enterprises have the characteristics of large scale and good welfare, but at the same time, the staff and workers have relatively high academic qualifications. For students of vocational colleges, the number of state-owned enterprises is less likely to enter. To this end, our country on vocational education should pay attention to the vocational education of rural residents above all. Because in the coming decades, rural areas will become an important source of China's labor force, and rural residents should be the main target of vocational education.

## **2.4 Democratic management of vocational education**

From the subordinate structure analysis of vocational education, it belongs to the subsystem of higher education system, in the construction of vocational education system, should also have academic system. Compared with traditional education, although the teaching goal of vocational education is to cultivate practical talents, the practice must rely on theory to ensure the scientific behavior of practice. As a modern academic organization, vocational colleges need to establish a democratic management system suitable for themselves. Burton, an American educationalist, argued that control of academic organizations is relatively decentralized, even under nationalized academic systems

and authoritarian governments. Why does it have to be this way? The knowledge-intensive organizational environment forces decision rights to remain at the operational level. Traditional vocational education in China is an educational model based on the planned economy. Under the influence of this system, the autonomy of teachers is greatly restricted, which is not conducive to the exertion of their own abilities. According to the organization theory, the organization with democratic management is a flat organizational structure with fewer levels and higher information feedback efficiency. Therefore, it has better stability. However, due to the influence of the bureaucratic structure, it will be limited in information feedback and its stability is relatively poor. Therefore, under the guidance of system theory, modern vocational education system must establish democratic management system to ensure the stability of the whole system.

### **2.5 Construction of the system of collaborative competition and capital flow**

In the traditional vocational education system, the funds for vocational education are allocated by the government. Although enterprises enjoy the fruits of vocational education, they will not bear the costs of education. This is contrary to the economic principles of the market economy system and is not conducive to the competition between vocational colleges. Analysis from the perspective of foreign vocational education management, an increase in the number of vocational colleges to improve the degree of competition between colleges, especially in the aspect of students compete, only has the strong ability of teaching of colleges and universities, the students will only at a competitive advantage in competition, but our country vocational education colleges and universities in the colleges and universities competition is not fierce, it is also limit the main factors of vocational education to improve teaching quality. In the modern vocational education system, the cost of vocational education should be borne by families and enterprises. As the self-help provider of vocational education, the government needs to provide relevant financial support for special vocational education to families and enterprises, so as to stimulate vocational education. Under the influence of this model, families need to participate in vocational education in order to obtain financial support from the government. In order to acquire excellent labor force, enterprises also need to bear human cost, and vocational colleges must improve their teaching quality in order to obtain more students.

## **3. Endnotes**

Under the guidance of system theory, the construction of modern vocational education needs to scientifically plan the vocational system from an overall perspective, among which competition is the main driving force to promote the system optimization. Competition between different vocational colleges, vocational colleges competition among teachers is the key to improve vocational education system, for modern vocational education system construction of evil, and not to overthrow the traditional system of vocational education, but on the basis of the traditional education system, the optimization of system function, to ensure the improvement of teaching quality.

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