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Research on the Service Model of Higher Vocational E-Commercialized Curriculum Based on Value Network

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ABSTRACT

In the environment of internet and e-commerce, the service of e-commercialized curriculum has gradually begun to develop. This paper introduces the theory of value network to support the service model of e-commercialized curriculum. Firstly, it analyzes the value network theory and its relationship with electronic commerce, and then discusses the existing problems and advantages of higher vocational e-commercialized curriculum. On the basis of these, it takes an analysis on the relationship between the members of value network, constructs the service model of higher vocational e-commercialized curriculum based on value network, and analyzes the value source, organizer, key factors and the integration process of the service model of higher vocational e-commercialized curriculum.

Keywords: Higher vocational curriculum, e-commercialized curriculum, service model, value network.

INTRODUCTION

The rapid development of internet and e-commerce makes information and knowledge unprecedentedly spread, causes profound changes in all areas of society. The change has already penetrated into enterprises, life, government, finance, education and other traditional industries. Utilizing internet cross-border thinking will be the development direction of many industries' future. Education is a typical traditional area, it will also face the transformation of e-commerce and mobile e-commerce, a variety of online education platform is rising. Higher vocational education as an important force in Chinese education also needs to think about the development model under the environment of e-commerce. Curriculum teaching in higher vocational education is the core, and the reform of course system will be the starting point of the reform about higher vocational education. Based on this, it takes the higher vocational course as the research object, utilizes value network theory of network economy to construct the the service model system of higher vocational e-commercialized curriculum. Its purpose is to promote the development of higher vocational education and grasp the trend of changes which brought by the internet and mobile internet through reformation of curriculum teaching way.

THE VALUE NETWORK AND ELECTRONIC COMMERCE

The Value Network Theory

Many scholars analyzed the difference between value chain and value network through the industrial structure, Potter proposed value chain concept firstly in the 'competitive advantage', it refers to a commodity or service in creating experiences during the process from raw material to the stages of final product, or a series of work process with some groups to work together. Not every node in the work process can create value, the strategic node in the enterprise value chain can be able to create value truly [1][2]. With the appearance and development of internet, the concept of value chain in e-commerce industry is not applicable anymore, because the value chain emphasizes the value of the segmentation, but e-commerce is not only integrating of the internal service flow, but also including suppliers, customers, partners and other stakeholders of the external process. In this case, it should analyze the business services model by value network [3].

In 1997, Adrian proposed the idea of value network in the 'discovery of profit area', it proposed that due to the increasing demand of customers, the impact of internet and highly competitive market, the enterprise should change from the traditional value chain to value network [4]. Lambert thought value network is a value creation system which takes customer as the center, it combines the advanced strategic thinking and modern supply chain management, instead of traditional supply chain model, which can meet the customers' expectation of convenient, efficient, personalized service and reliability [5]. David and Kirk expounded the meaning of value network in 'value network, break the supply chain, mining hidden profit', it connects the increasing requirements of customers with the flexible, efficient and low-cost commercial services, and utilizes information technology network to distribute products and service rapidly [6]. Creating value, a bigger pie, is fundamentally a cooperative activity involving customers and suppliers that a company cannot accomplish alone[7]. From the value chain to value network, there are two main progress: First, the value network doesn't focus on the value of the segmentation, but focus on value creation and the members in value network. Second, value network not only includes the enterprise, but also covers external stakeholders of enterprise, showing the structure of the network. The members in the network form strategic alliances.

The Application of Value Network in E-commerce Environment

As the core of modern economy, e-commerce has a great influence on the management and operation of enterprises and institutions. A lot of business has been e-commerce, such as purchase e-commerce, sale e-commerce, materials management e-commerce. In addition, the rapid spread of internet information, wide spread and real-time communication provide good

condition for the value network. Therefore, in e-commerce environment, the deconstruction and development of value network has become an important support for analysis on the service model.

In e-commerce environment, the application characteristic of value network mainly as the followings: first, the center of value network moves back, customer becomes the center of value. Strategic center has shifted to information, knowledge and other non-material resources, the focus has shifted from production to market demand. Customers have become conductors of the value network, rather than the passive recipient in the supply chain. Second, collaborative e-commerce applications based on value network. The key point of enterprise is committed to make suppliers, customers and other partners form a network of information value. Its purpose is to encourage all members in value network to play their advantages, so as to meet the needs of customers, and maximize value of the network [8]. Third, informationization and networking. Electronic commerce is an important way to realize network service. Besides internet, the design and application of information business process is also the important issue of value network. The operation model based on business process replace the operation model based on organizational structure, so that it can create a more effective service model [9].

ANALYSIS OF HIGHER VOCATIONAL E-COMMERCE CURRICULUM

In recent years, Chinese higher vocational education has made great progress, it has become the important force in higher education [11]. However, due to the late start of higher vocational education, the curriculum construction is relatively weak, curriculum design concept and implementation methods are in constant exploration. So higher vocational curriculum reform has become the focus and difficulty of the reform in higher vocational education [12]. With the development of information technology and electronic commerce, higher vocational education e-commerce will become a development trend and a new model of course implementation. In 1990s, the concept of network education has been put forward. Although the higher vocational education has not really realized e-commerce, it has also been carried out the reform of network education. During the development process, there are some problems need to be improved, and it can bring many benefits to the higher vocational curriculum reform.

The Problems in E-Commercialized Curriculum

The higher vocational e-commercialized curriculum is still in the primary stage, just stays in the mechanical network and digital level, not really realize electronic commerce. According to current situation, there are some problems in the higher vocational e-commercialized curriculum. First, it is simple to add network technology to the course. Network curriculum of higher vocational education is the embodiment of education informationization, many higher vocational colleges have tried on network curriculum, but most are with traditional network curriculum concept. For example, adding online question answering module of teachers, community forum discussion module, real-time video lectures, but the overall situation is still mechanical stack of technical. It can't really play teaching value and humanistic value of the network curriculum, there is no thinking about how to attract students to learn network courses independently. Second, curriculum development is lack of incentive mechanism. During the process of higher vocational colleges' curriculum reform, teacher is the main participants in teaching reform. Lack of incentive mechanism of persistent, resulting in poor quality of e-commercialized curriculum development, network curriculum become electronic version of traditional books, which is far from the expectations of e-commercialized curriculum. Third, curriculum teaching method is single. In curriculum system of higher vocational education, different nature of course should have different teaching method. For example, public course, general basic course and the theory part of professional course are more suitable for online teaching, however, the practice module of vocational skills course and training course need face-to-face teaching method.

According to the above analysis, in order to solve those problems of higher vocational e-commercialized curriculum, it takes value network as the theory basis, establishes e-commerce service model of higher vocational education curriculum by introducing the third party (the market mechanism) e-commerce platform.

Analysis on the Advantages of Higher Vocational E-Commercialized Curriculum

The benefit to higher vocational colleges

Through e-commercialized curriculum, part of courses is outsourced to the third-party e-commerce platform, which can reduce the face-to-face teaching space. So the colleges can save teaching space to construct practice and training venues, alleviating the pressure of lacking of practical base for many vocational colleges. It not only can converge the society and university teachers resource, solve the problem of teacher shortage, but also can help higher vocational colleges concentrate on its strengthening and optimize its core strengths by the integration model of third-party e-commerce platform. In addition, it can continue to promote higher vocational curriculum teaching and learning reform, meet higher vocational students learning habit need under internet environment. Through interactive binding of face-to-face and online learning, it can enhance learning effect of students. After introducing market mechanism, it can solve the problem of teachers' input and output in the new curriculum design, question answering and continuous improvement.

The benefit to higher vocational college students

Students are in a passive position under the traditional higher vocational education, there is no chance for them to choose teacher.

However, in the online model, students have more right to choose, they can choose their favorite teachers and courses, so that it can enhance students' learning initiative, receive more high-quality course teaching services. In internet era especially the popularity of mobile internet, online learning model is more suitable for students, it can attract students' attention, resulting in a better learning effect. In addition, students' professional learning can also break through the limits of time and space, making learning more effective.

The benefit to third party e-commerce platform

Third party platform can cooperate with higher vocational colleges through establishment of online learning platform and integration of teaching resources. So that it can obtain economic benefits of tuition fees, which is the basis of the third party platform development. According to the principle of network externalization, the more teaching resources the third party platform brings together, the more benefit it will get. So it is easy to form economies of scale, and then promote the sustainable development of the whole industry. The third party platform also can open the service of e-commercialized curriculum to community, to gain revenue by providing skills education, continuing education and other education services. In addition, according to the big data analysis, it can get consumers' habits and related information, and then carry out other internet value-added services.

The benefit to higher vocational education authorities

Higher vocational education authorities are concerned about the quality of higher education and the improvement of teaching efficiency, promoting reform of higher vocational education. Through the higher vocational e-commercialized curriculum, they can promote the reform of higher vocational education following developing trend of time, and improve the quality of teaching. In addition, the support of higher vocational e-commercialized curriculum is the object of national education information construction project, reflecting the intention of the policy.

THE SERVICE MODEL OF E-COMMERCE CURRICULUM BASED ON VALUE NETWORK

The higher vocational e-commercialized curriculum is a kind of educational consumption activities, relating to many members, and the relationship between them is complex. Compared with general e-commerce model, it has its own characteristics besides the logistics, information flow and capital flow. It provides students with a special service based on the will of students, which is not only different from the traditional course education services, but also different from the other e-commerce model. The higher vocational e-commercialized curriculum wants to abandon the impetuous and machinery, goes to the standardization and high-efficiency direction. It wants to get close to e-commerce model with technology, management and operational ethos. The value network is focus on the context within which a firm competes and solves customers' problems[13], it adopts the system of philosophy, in which members face value creation process together, they are responsible for the overall goal of the customer and value network. This structure is conducive to establish association between those members, so as to produce the maximum value, its elasticity is easy to adapt to market uncertainty. The more important thing is that the organizers of value network can meet the individual needs of students and maximize student learning value by integrating the strengths and resources of all the members in network, and then format the win-win outcome in higher vocational education industry.

The integration of resources is common characteristic of e-commerce and value network, which can maximize the value. In the process of vocational e-commercialized curriculum, it needs to integrate all advantages of various colleges and teachers. In order to achieve this goal, it needs to build the third party platform. So this model should include colleges, teachers, students, department of education and the third party e-commerce company. Thinking about the incentive mechanism in value network, the third party should be utilize company's operation way, then it can ensure continuous development of the e-commercialized curriculum services. Construction of the service system is essential for any kind of application model, it takes value network as the basis to build higher vocational education e-commercialized curriculum application model as shown in Figure 1.

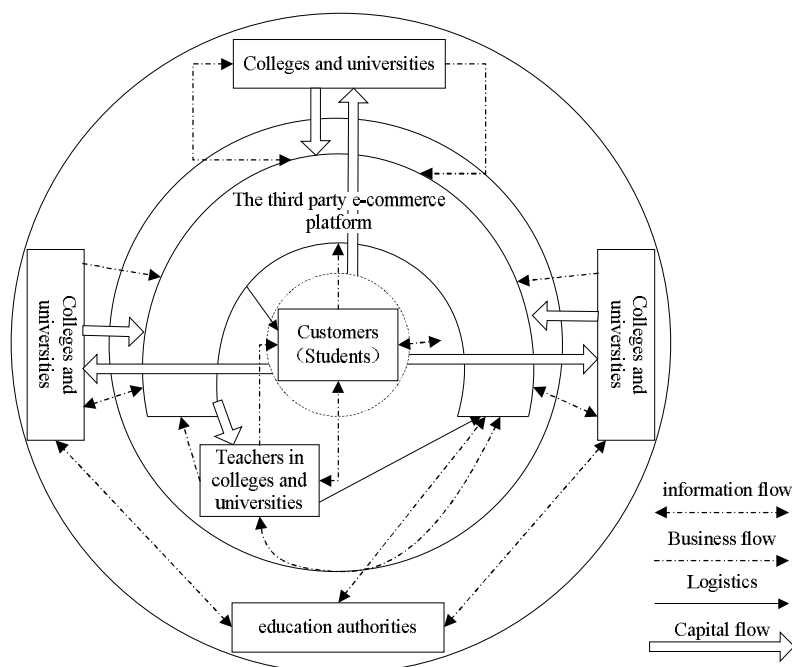


Figure 1 The value network system of higher vocational e-commercialized curriculum service model

The Value Source of Service Model

Customer is the core of industry value network system, and the value source of service model. The choice of customers is the choice of the target market. Customers of service model in the value network have two meanings: first, it is the internal customers of value system, the members in value network node become customer to each other. Second, it is the external customers of value system, they are the users of the product and service in value network, which is usually referred to final customers [11], in the higher vocational curriculum value system, the final customers are learners.

The internal customers of value network

The internal customers of value network can be referred to as indirect customers. In this e-commerce service model, the higher vocational colleges are the internal customers of value network system. Higher vocational colleges are not only the partner of the value network, but also the consumer node. The higher vocational colleges outsource part of the online learning courses to third party platform who conduct the online teaching. Higher vocational colleges need to pay a certain fee for the outsourcing content, and the mode of payment can be operated by the way of cooperative education. Besides this, the third party e-commerce company also can be called the customer to teachers, because teachers provide the original resource and service of teaching to the third party e-commerce company, the third party e-commerce companies need to pay fee to teachers. This can solve the problem that lacking of motivation for teachers, so that the service can be continuously improved.

The final customers of value network

The final customers of value network are the direct customers, the final customers of the service model of higher vocational e-commercialized curriculum are students. In traditional vocational e-commercialized curriculum learning, students have some of learning characteristics, such as poor knowledge, poor classroom teaching reception ability, lacking of concentration, self-centered, they wish have more options and so on. The service model of e-commercialized curriculum can solve these problems, students can study repeatedly in the third party e-commerce platform, and solve the problem of poor knowledge. Network teaching video and strong interaction can attract students' attention. In addition, students can choose their own favorite teacher to teach the course, it can enhance students' learning initiative. Students can also learn through mobile phones and other intelligent terminal devices at anytime, in anywhere, so that they can improve effectiveness of learning. Of course, students need pay the tuition fees to colleges as the ultimate recipient of the service.

The Organizer of Service Model

The organizer of service model is the third party e-commerce platform. The organizer is the central node of this e-commerce service model, its function is to match demand and supply, integrate resources of all members in value network, and assume the role of traditional intermediary. On the other hand, the organizer should increase the value by information coordination. It provides a platform to create value and solve problem of information asymmetry by the integration of course and teaching services. So, the organizer can create and maintain loyalty of customers, organize the internal relationship of value network. It is the integrator and leader of the value network, it can optimize the coordination, so as to ensure that all the elements in value network integrated tightly and consistent high quality services. To realize the extensive sharing of course resources and rapid

spread of e-commercialized curriculum should rely on the integration of the entire industry, not a college or university. No matter the early market research, entire investment, propaganda or service, they all need efforts of the third party e-commerce company to participate in, who can integrate each node resources, and then achieve the service of e-commercialized curriculum [14].

The essential factor for all business model to develop is interests, the third party platform in higher vocational education e-commerce should be able to obtain the expected benefit from this value network, so that it would promote the progress of entire value network system. Electronic commerce industry has the characteristic of network externality; we assume that the higher vocational e-commercialized curriculum also has the strong network effect. Economides proposed the network effect on the market invitation to enter model in the "network externality, complementarity and invitation to enter", it is shown as follow [15]:

$$\Pi = [A + f(S^*)] / 4n = n(S^*)^2 / (2n-1)^2 \quad (1)$$

We regard Π as the equilibrium profit expectations for the third party e-commerce company, where A is a constant, S^* is the expected equilibrium sales, $f(S^*)$ is the network effect function, n is the number of teachers, and the influence of n to third party platform profits are as follow [13]:

$$\frac{d\Pi}{dn} = (S^*)^2 [(2n+1)f'(S^*) - 2n] / \{(2n+1)^2 [2n - (2n-1)f'(S^*)]\} \quad (2)$$

Thus, the profit change direction following the number of teachers will only depend on network effect function $f'(S^*)$, only when

$$2n / (2n+1) < f'(S^*) < 2n / (2n-1) \quad (3)$$

When $d\Pi/dn > 0$, it will increase the profit of the third party e-commerce platform with the increase of n .

According to the above analysis, if there is a strong network effect on the margin, namely $f'(S^*) > 2n / (2n+1)$, the third party e-commerce platform will invite teachers to join the value network. Therefore, under the external conditions of strong network, the third party e-commerce platform will invite more teachers to join this service model, in order to expand the number of products and services to make full use of the role of network externality. The interests of network externality will cause the third party platform to become the organizer of value network.

The Key of Service Model

Service providers

There is no value without service products and service providers, So the service provider is the key to this service model. In higher vocational e-commercialized curriculum service model, teachers are subject of the service. They provide original course resources and teaching services, including teaching video, teaching phonetics, multimedia courseware, online Q&A, sharing the resource and so on. These teaching resources are the prerequisite for development of e-commercialized curriculum.

Service platform

Service platform is the media for service recipient and service delivery channel. Firstly, it needs to process the developed course resources to ensure they can meet students' needs and make sure them be suitable for transmission on the network, to develop the value-added applications for students such as online communities. Secondly, the service platform is learning channel for students. Besides providing suitable course resources for students, it also needs to provide technical support, guarantee efficiency, convenience, safety and practicality of learning in the online platform. Considering that the popularization and application of mobile electronic commerce and smart phone, the third party e-commerce company should develop mobile e-commerce platform and app to meet the full range of online services requirements.

The Higher Vocational Education Authorities

The higher vocational education authorities are education administrative organizations, which are in charge of higher vocational education. They include ministry of education, local education department, education bureau and other relevant departments. These authorities within the jurisdiction of the development, management, inspection, supervision and other duties [16]. The higher vocational e-commercialized curriculum is the application of e-commerce in higher vocational education, the participation and support of the higher vocational education authorities is very important to the success of this model.

Other Members in Value Network Node

In the value network, there are other members to play a supporting role. They provide support for the service model, such as the application software providers, system integrators. They provide software support for the service model of e-commercialized curriculum. In addition, the platform will involve the transfer of capital flows such as payments, transfers and other services, then it need the payment service providers' support. The payment service providers mainly refer to bank, the third party payment service providers who help e-commerce platform to solve the problem of capital flow.

The Integration Process of Service Model

The important issue to success of this service model is that the integration of third party e-commerce company, higher vocational colleges, the university teachers, and then to build a win-win cooperation of the industry value network. The education authorities' supervision is also important in the service model. After all, education is different from general commercial activities, its purpose is not only profit. Although the introduction of electronic commerce on higher vocational education reform, it doesn't mean we can deviate from the essence of education and the rule. The service model of vocational e-commercialized curriculum includes the online teaching model and the traditional teaching model, they are an organic whole, not independent to each other, so that it can create the most effective teaching model in higher vocational college. Colleges and universities need to be responsible for the construction of curriculum system, and determine which courses are need the face-to-face teaching, which are need the online teaching and learning (outsourced). In 2000, the ministry of education issued the opinions on strengthening the work of higher vocational education personnel training ([2000]2), making a clear request of a standard course system [17]. Its course system is set as shown in figure 2.

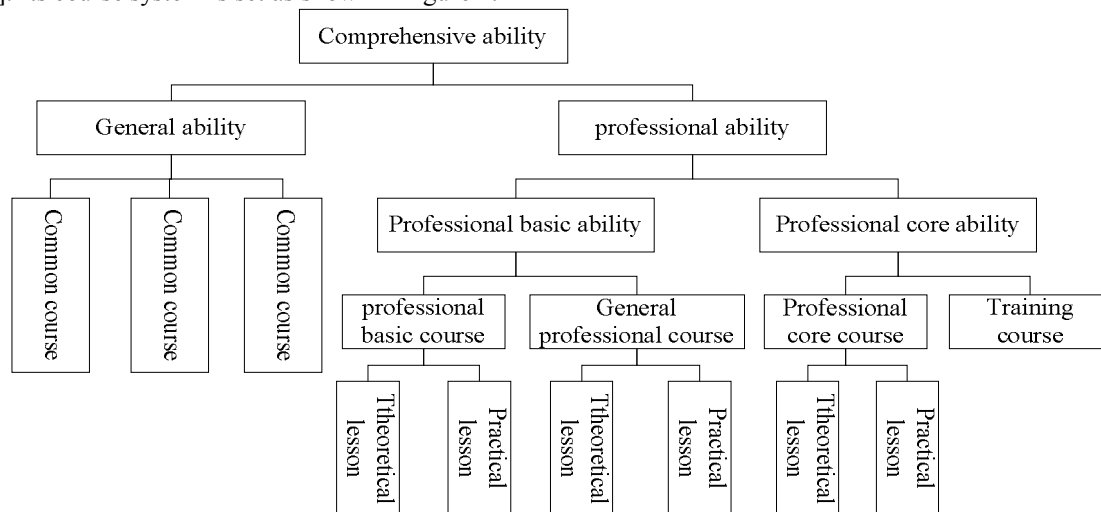


Figure 2 Higher vocational colleges course system based on competency

Generally speaking, the general ability courses are pure theoretical courses such as public basic courses, general courses, they are more suitable for online learning and outsourced to the third party e-commerce company. The professional foundation courses, professional core courses are the B class courses which contain theory content and vocational skills practice, for this kind of courses, the colleges can outsource the theory content to the third party e-commerce course platform, the practice content still take face-to-face teaching way. Only after learning the theoretical part in online platform, students can take part in the practical aspects of the study, so as to ensure the organic combination of online and offline teaching. The training courses take face-to-face teaching, but the training instruction manual should be shared in online platform for students to study. The main process of the entire service is shown in figure 3.

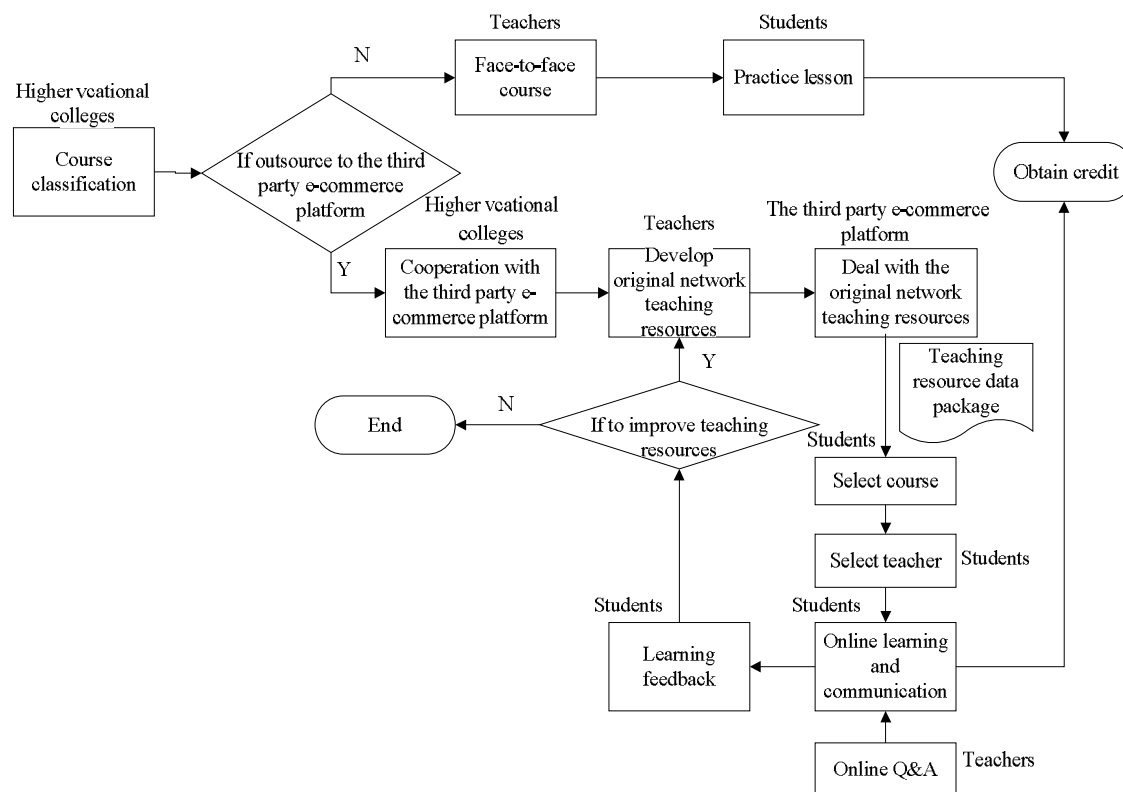


Figure 3 The main process of vocational e-commercialized curriculum service model

CONCLUSION

The construction of the service model of higher vocational college e-commercialized curriculum has an important significance to curriculum reform and teaching reform, meeting the learning needs of higher vocational college students and improving the effectiveness of vocational education. Based on the literature research and data access, using the idea of value network, it takes curriculum teaching system in higher vocational education as the research object, analyzes the industry value network of higher vocational education e-commerce, also the functions and benefits of each node in the value network and the service model process.

The following conclusions can be drawn through the discussion of this paper. Firstly, the service model of higher vocational education e-commercialized curriculum has certain significance to the reform of higher vocational education. Although higher vocational education has network education for a long time, its application has been in the exploratory stage, there is no one perfect, sustainable development model. Therefore, under the electronic commerce environment, this model has practical significance to realize the reform of curriculum teaching. Secondly, higher vocational college students' learning characteristics and learning needs become the internal driving force of higher vocational education e-commercialized curriculum. Through this e-commerce model, it can realize repeat study, selective study and individuality study expectation, improve the whole teaching effect. Thirdly, under the application of value net system architecture and e-commerce, the model can realize the integration of resources advantage of higher vocational education, make full use of the advantages of higher vocational college, social enterprise and teachers in universities, so as to break through the traditional mode of higher vocational education, open up the entire chain of higher vocational education, and then utilize the value of all members in the network.

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