Research on the Development Path of Industry-education Integration Talent Training for E-commerce Majors in the Context of 5G Internet of Things

Yu Zhao*, Min Liu and Lijin Ma

{*Corresponding author: 10800382@qq.com}
{529026272@qq.com, 625201718@qq.com}

Shandong Technology and Business University, Yantai 264026, Shandong, China

Abstract. With the rapid development of social economy, e-commerce industry has been growing rapidly, continuously and well. Especially in the field of education, the combination of IOT technology and Internet industry has become a new trend. As an important carrier and resource base for the docking of talent training direction between e-commerce enterprises and colleges in China, collaborative innovation promotes the integration of professional industry-education and the transformation and upgrading of students' learning ability, which needs to be realized through new information means. Without the joint efforts of e-commerce enterprises and universities can the integration of e-commerce professional training be realized, both of which need to promote curriculum integration and practical teaching through school-enterprise cooperation and collaborative innovation. This paper not only researches the development path of industry-education integration talent training for e-commerce majors, but also establishes a talent training quality evaluation system to provide reference and reference for school-enterprise cooperation.

Keywords: 5G Internet of Things. E-commerce Professional Industry-education integration, Talent Training Development Path

1. Introduction

With the rapid development of economy, China's e-commerce industry has made great achievements and set off a wave of e-commerce boom all over the country. However, due to the unclear objectives and requirements of domestic training for e-commerce professionals, the conflict between the traditional teaching mode of universities and social needs and other problems, it is difficult for students to meet the actual needs of enterprises after graduation. Therefore, we must speed up the pace of curriculum reform, strengthen the construction of innovative capacity of industry-education integration, and establish a new composite advanced skills training base suitable for modern market-oriented operation and industrial chain [1]. Thus, we can promote the development of school-enterprise cooperation; Through school-enterprise

ICSETPSD 2023, November 17-18, Coimbatore, India

DOI 10.4108/eai.17-11-2023.2342766

cooperation, professional practice base construction and other forms, to achieve a win-win situation for both schools and enterprises, to cultivate talents with high innovation ability and high level of comprehensive quality for students to meet the needs of society. It is necessary to strengthen the research and teaching reform work on the application of e-commerce courses in the integration of industry and education [2].

2. Problems of Implementing Industry-education Integration in E-commerce Majors

2.1 Enterprise Aspect

E-commerce majors have a certain foundation in talent training, but at present, there is a shortage of practical ability, innovation and entrepreneurship and comprehensive quality of students in enterprises. First of all, there is a lack of school-enterprise cooperation. There is no effective docking mechanism between the school and off-campus enterprises, which leads to the fact that students cannot really contact and participate in classroom teaching from school to society, students cannot see the problems from the perspective of enterprises, and they cannot integrate into school-enterprise cooperation. Secondly, the lack of social experience e-commerce management personnel team construction planning and team formation standard system and other related institutional norms support, which leads to students can not adapt to the work of enterprises after graduation, they can not integrate into the general social environment, which has caused a certain degree of hindrance to the cultivation of e-commerce professional talents. Finally, the lack of practical ability training [3]. During their study in school, the students' theoretical knowledge and the operation process of production enterprises are not well connected, and they cannot apply what they have learned in the actual work.

2.2 For the Achool

The school assumes the role of education in the role of industry-education integration, and the educational function of the professional curriculum and the personalized development of students are indispensable to achieve the teaching objectives of the school. Therefore, who can adapt to social and economic needs, but also have certain innovation and practical ability. With the wide application and popularization of Internet of Things technology in industrial production, enterprises have put forward higher requirements for e-commerce graduates. At present, China's electrical students lack practical hands-on operation and experience in problem analysis and problem solving, while the unreasonable allocation of educational resources in colleges and universities leads to unclear training objectives and a disconnect between professional courses and social needs, which leads to students not being able to adapt to market changes and meet the requirements of enterprises for electrical talents [4].

2.3 For Teachers

At present, professional industry-education integration talents face the problems of lack of experience and weak hands-on ability in production practice. The disconnection between traditional teaching methods and social environment leads to

teachers' lack of deep understanding of the curriculum, and students are unable to apply what they have learned to practical life and work to solve various problems encountered in daily life. On the other hand, many universities do not introduce professional talents such as excellent experts and professors in e-commerce related industries to participate in the process of off-campus education reform and construction, which causes teachers to be unable to update the content of teaching materials in time with the needs of enterprises and lack practical experience when lecturing in the classroom.

3. New Path for the Development of Industry-education Integration Talent Training in E-commerce

3.1 Let More Enterprises Come in and Strengthen the Integration of Industry and Education

In the training process of e-commerce professionals, we should not only focus on theoretical learning and skills training, but also strengthen practical ability, innovation consciousness and entrepreneurship. On the one hand, through the construction of industrial education integration curriculum, to cultivate students' innovative consciousness and entrepreneurial spirit [5]. On the other hand, through building internship bases and training platforms with enterprises, and at the same time, rely on the campus network to form a "double creation" program to drive the attention and training of e-commerce professionals from all walks of life, so that students can continuously exercise their comprehensive ability and innovation consciousness in the learning process. The students can further improve their comprehensive ability and innovation awareness in the learning process [6].

The implementation of the integration of industrial education provides an important guarantee for solving the problem of professional training and realizing the resource sharing of industrial education. Through in-depth analysis and research on logistics, information flow and capital flow in the context of e-commerce, it is found that at present, the courses offered by universities in China mainly focus on teaching the theoretical basics of e-commerce-related disciplines, which lack professionalism and are not obvious in the practical process. At the same time, due to the slow return of traditional industries and the unreasonable design of talent training programs, students have difficulty in adapting to social needs after graduation, and enterprises are in urgent need of new composite practical skills through school-enterprise cooperation [7].

3.2 Innovative E-commerce Education Platform

E-commerce education platform is a new teaching mode, which combines classroom and practice and breaks the defect of "theory but not skills" in the traditional curriculum system. In this paper, we study a kind of e-commerce teaching platform based on JSP technology.

(1) Platform implementation technology

ASP (Active Server Pages),is a Web-based, cross-platform service that enables interoperable data transfer and easy access from any browser, with good generality and portability, which can be of great help in education, business management and

research and teaching. ASP uses simple and easy-to-understand scripting languages such as VBScript and JScript, which provide better visibility than traditional assembly languages and enable fast and efficient interaction between users at different levels, making it easy for users to understand and operate. The scripting language used in ASP (VBScript, Jscript) is executed on the WEB server side, which can be quickly adapted to the different needs of users, and also has good portability, which can bring better services for education, business management and research, etc. The flow of ASP page execution is shown in Figure 1.

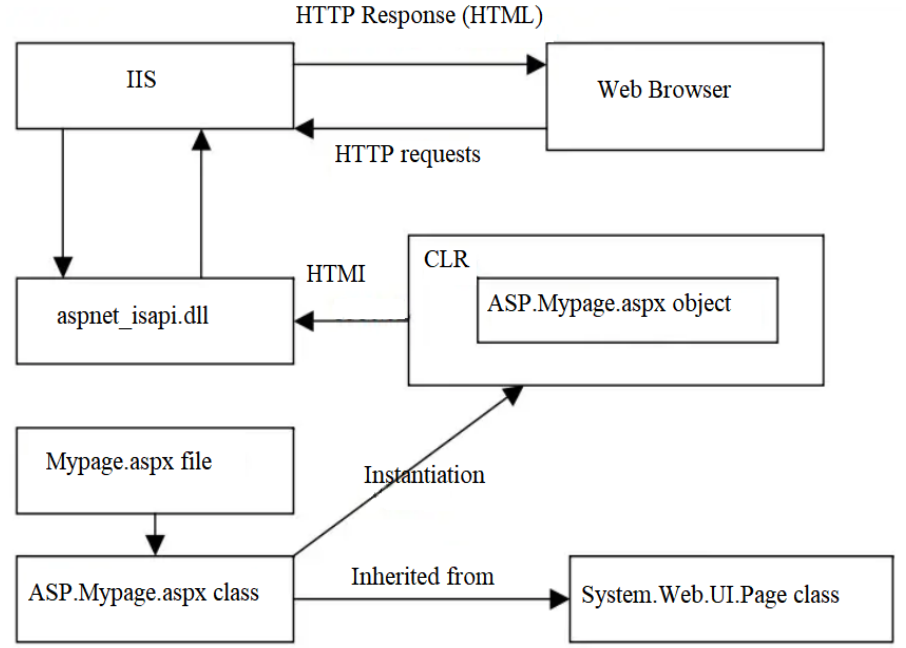

Fig.1 ASP page execution flow

CSS technology is a simulation environment based on computer and communication technology, which mainly uses graphics and images to display system functions and obtain the required information by analyzing and processing data. In the context of e-commerce, the application of BIM modeling software can realize the interaction between virtual enterprises and actual production. At present, universities have started to establish a simulation environment based on CSS (Computer Integrated Manufacturing Engineer) technology, but the simulation environment is mainly developed and designed for a professional field and is widely used, so the professional simulation model in this simulation environment is not fully applicable to the field of e-commerce [8].

The css file code is shown below.

```
BODY{
}A:link {
CURSOR: hand; COLOR:#9F9F9F; TEXT-DECORATION: none}
A:visited {
```

CURSOR: hand; COLOR: #9F9F9F; TEXT-DECORATION: none}
A:active {
CURSOR: hand; COLOR:#333333;TEXT-DECORATION: none}
A:hover {
COLOR: #333333; TEXT-DECORATION: none}
A:active {
COLOR: #9F9F9F}

(2) E-commerce teaching simulation platform design

E-commerce course is a very practical discipline, because students do not have a good grasp of the relevant theoretical knowledge, it is difficult to use it flexibly in real life. Therefore, it is necessary to design a simulation platform (Figure 2) to make up for what students cannot learn in the teaching process.

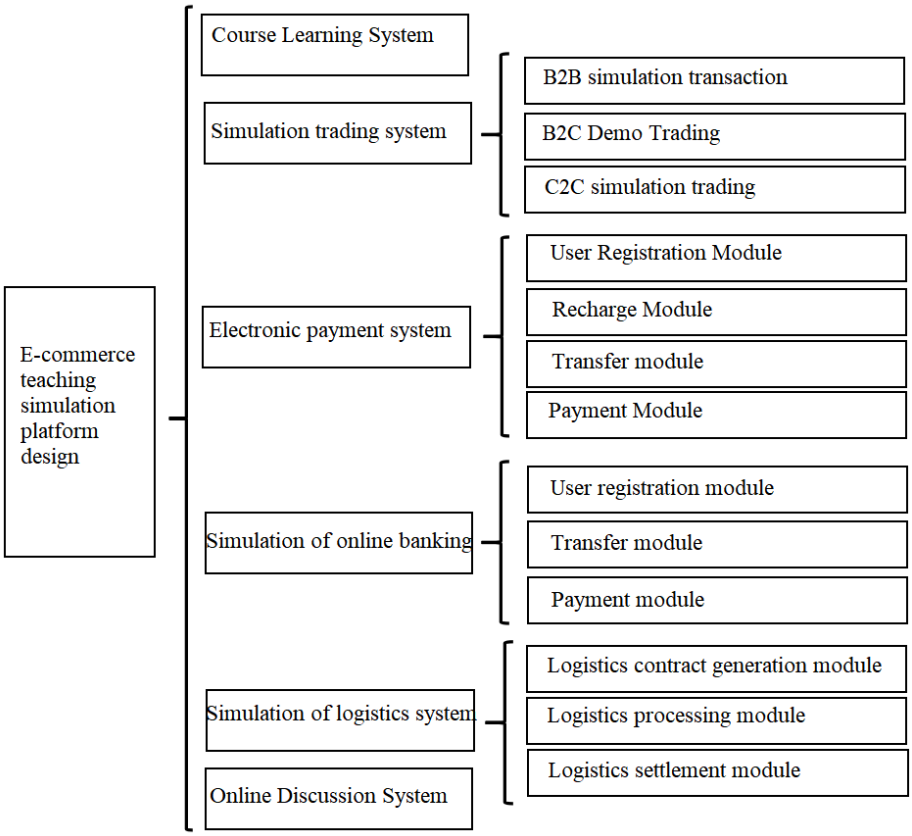

Fig.2 E-commerce teaching simulation platform design

4. Establish a Teaching Quality Evaluation System Integrating Enterprise Standards

In traditional teaching, the curriculum system includes experiments, practical training and production practice. E-commerce is a highly comprehensive and practical subject. Due to the lack of practical experience and poor understanding of enterprise management, students are out of touch with theory and practice, and they cannot evaluate whether the professional training program is reasonable and feasible from the perspective of industry and society. Therefore, this article establishes a comprehensive quality evaluation index system for logistics majors in schools. Establishing a teaching quality evaluation system that combines with enterprise standard issues is a necessity for curriculum reform and development, as well as a necessary prerequisite for implementing training plans and doing a good job in student management [9].

4.1 Construction Principles

(1)Principle of correct orientation

The cultivation of industry-education integration talents in e-commerce is a very complex and systematic process, which requires the coordination and cooperation of the government, enterprises and universities, and the organic combination of school education and social practice. First of all, clarify the positioning of course objectives, e-commerce professional teaching must be market demand-oriented to carry out classroom teaching activities; secondly, according to the actual situation to develop corresponding programs and implement effective management and control of production costs and expenses; Finally, by cultivating students with their overall quality and ability, the cultivation of students is a very complex process. Through the cultivation of students' comprehensive quality and ability and the integration of industry education, this paper establishes the evaluation system of the effect.

(2)Scientific and reasonable principle

The scientific and reasonable principle of professional talents training refers to the fact that colleges and universities should take the market demand as the guide when establishing the curriculum system and fully consider the problems of students' learning, life and work during school. First of all, it needs to have a clear target orientation, e-commerce professional teaching must be based on the direction of electronic education to teach the basic knowledge and skills of electricity and cultivate students' professionalism. Secondly, the curriculum system needs to be diversified, multi-level and innovative. Secondly, according to the actual situation, choose suitable teaching materials and teaching methods to guide the practical operation ability cultivation process in what way to teach the curriculum system construction, through the students' classroom practice ability to improve the effectiveness of the curriculum system construction; Finally, we adopt various forms of extra-curricular training in the classroom to enrich the classroom content through extra-curricular practical activities, improve the students' hands-on ability, and train them to acquire new knowledge and skills in the study of electricity [10].

(3)The principle of practicability

In traditional teaching, due to the strong theoretical nature of professional courses, students have high requirements for practical operation ability. E-commerce is a comprehensive curriculum area that integrates the knowledge and skills of many disciplines, which is not just a simple task of completing the learning by lecturing the content learned in class and digesting it by themselves. E-commerce can also carry out transaction activities through the network and complete a series of business

activities such as order delivery, so the traditional teaching mode of training professional talents is difficult to adapt to modern society's comprehensive quality requirements for complex applications.

The training professional industry-education integration talents has become an important issue and e-commerce as a new business model, compared with traditional industries, has more powerful and competitive advantages. Therefore, when evaluating the learning effect of students, we should not only consider whether their academic level and comprehensive quality meet the standard, but also combine the practical application ability to judge the teaching results of the course.

(4)Principle of education promotion

It means that the construction of talent training quality evaluation system for undergraduate majors in e-commerce must take notice of the educational promotion role of the evaluation system and provide more employment positions for the society, enterprises and students. At the same time, it should also focus on cultivating the comprehensive qualities that college students need to have to adapt to changes in the working environment.

4.2 Indicator Calculation

(1) Indicator calculation

The indicator weights are set to, respectively, if m experts are organized to evaluate and score the indicators.

The weight of the indicator is set as $w_{i1}, w_{i2}, w_{i2}, \cdots, w_{in}$ respectively, if m experts are organized to evaluate and score the indicator.

For the ith level 1 indicator, if the scores of m experts evaluating its level 2 indicators are recorded as $w_{i1}, w_{i2}, w_{i2}, \cdots, w_{in}$, where $M_{ijk} \ni \{A, B, C, D\}$, the mean value of the evaluation results of these m experts for the ith level 1 indicator can be expressed as shown in Equation (1):

$$H_i = \frac{1}{m} \sum_{j=1}^{m} \sum_{k=1}^{m} w_{ij} M_{ijk} = a_i A + b_i B + c_i C + d_i D \quad (1)$$

(2) Calculation of comprehensive evaluation results

The comprehensive evaluation results of talent cultivation quality of e-commerce undergraduate majors can be obtained by applying hierarchical analysis to the results of index calculation. Its calculation is shown in Equation (2):

$$H = \sum_{i=1}^{7} w_i H_i = aA + bB + cC + dD \quad (2)$$

Where each level is expressed as shown in Equation (3)

$$a=\sum_{i=1}^{7}w_i a_i, b=\sum_{i=1}^{7}w_i b_i, c=\sum_{i=1}^{7}w_i c_i, d=\sum_{i=1}^{7}w_i d_i \quad (3)$$

The comprehensive evaluation results were graded as follows: excellent A: a $\geqslant$ 0.60, and d $\leqslant$ 0.05; good B: a + b $\geqslant$ 0.60, and d $\leqslant$ 0.10; average C: between good and poor; poor D: d $\geqslant$ 0.20.

5. Conclusion

Through the analysis of the above examples, we can see that e-commerce is a very comprehensive and systematic process. First of all, in terms of curriculum, traditional teaching is centered on teaching materials to impart knowledge theory and basic skills to students. And more emphasis is placed on practical, application-oriented and innovative features for classroom teaching in electrical engineering education. Secondly, in terms of technical ability, in e-commerce profession is mainly reflected in two levels: One is the relevant courses provided by enterprises and standard schools; the other is the universities to achieve docking goals.Finally, from the perspective of school-enterprise cooperation, the integration of industry and education in e-commerce profession needs to establish a systematic, standardized and practical curriculum system.

References

[1] Hu Dahai,Xia Qiong. Internet False News Information Feature Extraction and Screening Based on 5G Internet of Things Combined with Passive RFID[J]. Computational Intelligence and Neuroscience,2021:20-21.

[2] Meixuan Li,Yanru Lu,Feiran Su. The influence of e-commerce on international economy and trade under the background of "Internet +"[C]//.Proceedings of 4th International Conference on e-Education, e-Business and Information Management (EEIM 2021).,2021:105-113.

[3] Ahmed A. Abd El-Latif,Bassem Abd-El-Atty,Wojciech Mazurczyk,et al. Venegas-Andraca. Secure Data Encryption Based on Quantum Walks for 5G Internet of Things Scenario[J]. IEEE Transactions on Network and Service Management,2020(1):17-19.

[4] Wang Yue. Structural strength of loess in mountainous areas and optimization of rural public management services based on 5G Internet of Things[J]. Arabian Journal of Geosciences,2021:14-15.

[5] Mayue Zhang,Rourou Hu,Songchun Wang. Research on the Operation Mode of E-commerce under the Background of WEB Celebrity Econom[C]//.Proceedings of 2nd International Conference on Education Technology, Economic Management and Social Sciences (ETEMSS 2021).,2021:246-254.

[6] Xuefeng Zhao,Dongtao Sun. Research and Construction of Hierarchical E-commerce Professional Practical Training System Based on Industry-education Integration[C]//.Proceedings of 2019 International Conference on Global Economy and Business Management(GEBM 2019).Clausius Scientific Press,2019:245-249.

[7] Belinda Pastrana,Sergio TobÃ³n. Emerging needs of human talent training in leading information technology companies, a socioformative analysis[J]. World Review of

Science, Technology and Sustainable Development,2021(4):15-16.
[8] Chen Guohua,Li Xiaofeng,Zhang Xinyu,et al. Developing a talent training model related to chemical process safety based on interdisciplinary education in China[J]. Education for Chemical Engineers,2021(1):32-34.
[9] Boru Yang,Yuankun Nie,Bingqian Zhou. Research on Identification of Key Factors of Marketing Talent Training by Using Big Data in the Internet Era[J]. International Journal of Frontiers in Sociology,2021:23-25.
[10] Haiyan Cao. Research on Innovative Talents Training Modes of Industrial Design Major in the Era of "Internet Plus"[C]//.Proceedings of the 5th International Conference on Social Science and Higher Education(ICSSHE-19).,2019:821-824.