The Design and Application Research of Foreign Trade Simulation Practice Technology Platform

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Abstract: With the development of international trade and foreign trade technology, foreign trade professionals have become a hot demand in today's society. The foreign trade simulation practice technology platform mainly aims to cultivate foreign trade talents and management talents with practical ability, and establish a stable simulation platform, so that students can effectively feel the process and challenges in foreign trade transactions. In terms of concept, this paper integrates international economics, e-commerce theory, virtual three-dimensional scene, virtual phenomenon and foreign trade practice process, which well simulates the real environment of international business, so that students can achieve an immersive sense of reality. With the actual working process of the foreign trade industry as the background, the teaching focus is integrated into it, and through the Internet, students can truly experience the locations, characters, documents and scenes involved in the foreign trade business. The experiment has proved that the passing rate of the foreign trade simulation practice technology platform in the one semester of teaching is as high as 95%, which perfectly reaches the purpose of combining teaching and practice.

1. Introduction

With the development of "The Belt and Road Initiative" in China, cross-border e-commerce with "Internet + foreign exchange" as the core has grown rapidly, making great contributions to national import and export[1]. International business and Business English majors in Chinese universities have strengthened the successful education and research of cross-border e-commerce platforms. They introduced home-school cooperation methods with enterprises, and cooperated to build practical online commerce and e-commerce platforms. In January 2018, the data from China Internet Information Center showed that with the advent of the "Internet +" era, e-commerce has entered the forefront of the capital market[2]. Cross-border e-commerce is expected to be a powerful tool to prevent a slowdown in international growth. At the same time, the Internet-based foreign trade simulation platform has also become the focus of the research and development and promotion of education software enterprises.

In foreign trade simulation practice technology platform design and application research, many scholars study and achieve good results, such as: Akerman A discusses the influence of electronic commerce on international trade and employment, he thinks that the application of electronic commerce can improve the overall economic interests of all countries, although the current earnings may be concentrated in the developed countries in the short term, but in the long run, developing countries will benefit more. The use of e-commerce not only can greatly increase the international trade volume, but also can produce knowledge spillover effect [3]. For the first time, Gandolfo G clearly pointed out that the network economy should be a complementary to the traditional economy, rather than that the network economy is built on the traditional economy. We should fully understand this problem. In addition, their research also denies the understanding of network economy as a virtual economy completely opposite to the traditional economy[4].

On the basis of in-depth research and understanding of the relevant literature and application of domestic and foreign trade simulation practice technology platform, this paper distinguishes the foreign trade automation model, and summarizes the foreign trade simulation practice technology platform. It mentions many problems and challenges in the development of foreign trade simulation technology platform. Through the analysis of representative cases, a new foreign trade simulation technology platform is built, students are compared for a semester, and the foreign trade practice simulation platform is updated and optimized according to the experimental results. Finally, a stable foreign trade simulation platform is established, it can cultivate more and more relevant professionals.

2. Research on the Design and Application of Foreign Trade Simulation Practice Technology Platform

2.1 Basic Framework and Teaching Method of Foreign Trade Simulation Platform

The basic structure of the foreign trade simulation practice technology platform is first divided into eight parts, each part respectively have two small modules, and each small module respectively have two teaching objectives: teaching content, practice requirements. The scientific elements of this part are related to the teaching level of the university, and students are required to master relevant basic skills. The work field requires students to carry out full-time professional development in the actual simulation work of "hands-on, thinking, internship and work" [5].

The theory of foreign trade simulation platform first adopts the practice-based learning method. Practice-based learning methods require students to "learn while doing". The specific teaching methods are determined by teachers and students, meanwhile, students actively and fully participate in the whole process to achieve the effect of combining physical and mental strength. Students can choose their own professions from a variety of possible occupations. Students can also predict the consequences of their actions before taking action, thus consciously and determined to influence the consequences of their actions through planned actions [6-7].

2.2 The Significance of Establishing a Foreign Trade Simulation and Practice Technology Platform

Through the foreign trade simulation and practice technology platform, students can understand the role of the company in foreign exchange education, explain the relevant professional responsibilities of each position in the foreign trade department, and integrate related foreign trade technology, then to solve the problem that students are not familiar with the work of foreign

companies, do not know a lot of professional responsibilities, and cut off the professional knowledge of foreign trade and practical work contact. Internship courses taught by foreign entrepreneurship training institutes require students to "learn while doing", so as to help students solve the problem of insufficient practical ability. At the same time, in the training of foreign trade simulation practice technology platform, students must create their own simulation companies in groups, act as the role of administrators, and create companies with their own products. It can enhance the working ability of the student group and the team spirit of cooperating with others, and help to solve the problem of the weak student group.

Students engaged in foreign-related business activities in schools can not only shorten students 'corresponding teaching time, save energy and cost, but also focus on education to facilitate students' centralized control, then it can solve the problem of scattered students and difficult management. Starting a business in simulation education also provides important guidance for students to start a business in practice in the future. At the same time, strengthening students' business knowledge can solve the problem of insufficient the knowledge[8-9].

2.3 Algorithmic Application

This paper evaluates the students who have passed the foreign trade simulation practice technology platform for four times, mainly in the mid-term, final, real machine and random test. Bayesian algorithm was used for the calculation [10].

With the sample dataset D= {D1, D2 …, Dn}, each attribute set of the sample data, the class variable, and D can be divided into Y $X = \{X_1, X_2, \cdots, X_d\}$ $Y = \{Y_1, Y_2, \cdots, Y_m\}$ m $P(X|Y)$ A category. When X and Y are regarded as random variables, they are called the posterior probability of Y, In this way, P (Y) becomes the prior probability of Y. According to Bayes' algorithm and theorem, we can determine that the posterior probability can be fully expressed by prior probability P (Y), class conditional probability, and evidence P (X): $P(X|Y)$

$$P(Y|X) = \frac{P(X|Y)P(Y)}{P(X)} \tag{1}$$

There are two different methods to calculate the class conditional probability in Equation (1): the Naive Bayes classifier and the Bayesian belief network. The Naive Bayes classifier is used to calculate the class conditional probability $P(X|Y)$[11-12].

$$P(X|Y \approx y) = \prod_{i=j}^{d} P(X_i|Y \approx y) \tag{2}$$

3. The Application Research and Design Experiment Based on Foreign Trade Simulation Practice Technology Platform

3.1 System Design Requirements

The System design requirements of the foreign trade simulation practice platform are as follows:
(1) It should be easy to use, with access to the new C/S architecture, and easy to install and upgrade. Customers only need a standard browser, no additional software installed.

(2) There are several requirements to affect the education system. The main roles are divided into suppliers, buyers, importers, exporters, international banks and import banks. Students join the program and do their business sites eagerly on the playground like independent business units. Each task can conduct business activities such as finding business partners, preparing transactions, negotiating, signing contracts, and performing contracts, in accordance with established rules and identifying job vacancies.

(3) It should have convenient macro management, real business environment, and the participants of such a foreign trade platform fully cooperate to complete the transaction process. The trainer can adjust multiple macro references at any time.

(4) It should have the characteristics of an e-commerce enterprise, including the exclusive BtoB portal, then through the website, participants can publish information and find different sources. Economic planning activities are also implemented through advanced e-commerce tools.

(5) It should have emergency handling capability. In order to show the authenticity of the actual tasks, the system has designed the emergency plan technology and emergency management system. One is to identify the hidden dangers of accidents in the freight process, the other is to solve the problems caused by some irregularities in the business process, when targeted and necessary, the instructors will make the judgments.

(6) The evaluation process is required to match the actual situation of foreign exchange transactions, and can be expected and clearly measured from multiple angles.

3.2 Architecture of the System

This article is mainly about the server and the client. Server groups are the primary data servers and network servers. The primary data server includes virtual component libraries, data centers, data management and memory interfaces. The client is mainly a virtual training service area with a virtual training service desk and a virtual training service module. The development process of the virtual foreign exchange training program is based on the distributed model of C/S architecture, and our foreign trade simulation practice technology platform is designed to give full consideration to the convenience of application, so our client installed a browser supporting Java language. This design can ensure that the main client, background interaction and the final result of the problem. At the same time, our design and application can also realize the Web server and data server to complete the client application function. A Web server is a Java application. After startup, you will listen to customers' questions, as well as explain and answer customers' questions on the mentioned platform. The functions of the forex simulation training program are as follows: the client sends the HTTP requests through the browser, submits the URL of the Web server defined by the service application, and the Web server publishes the HTML client software embedded with Java Applet, and the browser uses HTTP protocol. The client software works in the browser to create virtual training scenarios and client communication interfaces. We designed the foreign trade simulation practice technology platform, it provides a complete virtual training scene and interactive user interface. At the same time, when we design and apply the platform, we also give full consideration to the communication port and the selected server communication port, as well as retrieve data and other scenarios. Finally, the Web server transmits the file information required by the command to the user, and the client receives the file information and publishes it to the browser.

4. The Application Research and Experimental Analysis Based on Foreign Trade Simulation Practice Technology Platform

4.1 Comparison of Teaching Quality

In order to compare the teaching results of the traditional teaching method and the foreign trade simulation practice technology platform in one semester, after receiving the two teaching methods, the students also participated in four tests of the same type. The results of their respective passing rates under the same questions are shown in Table 1.

Table 1: *Comparison of teaching quality of two teaching methods*

	midterm	final exam	practice	random test
traditional teaching methods	61	72	66	73
Simulation practice platform	98	97	93	96
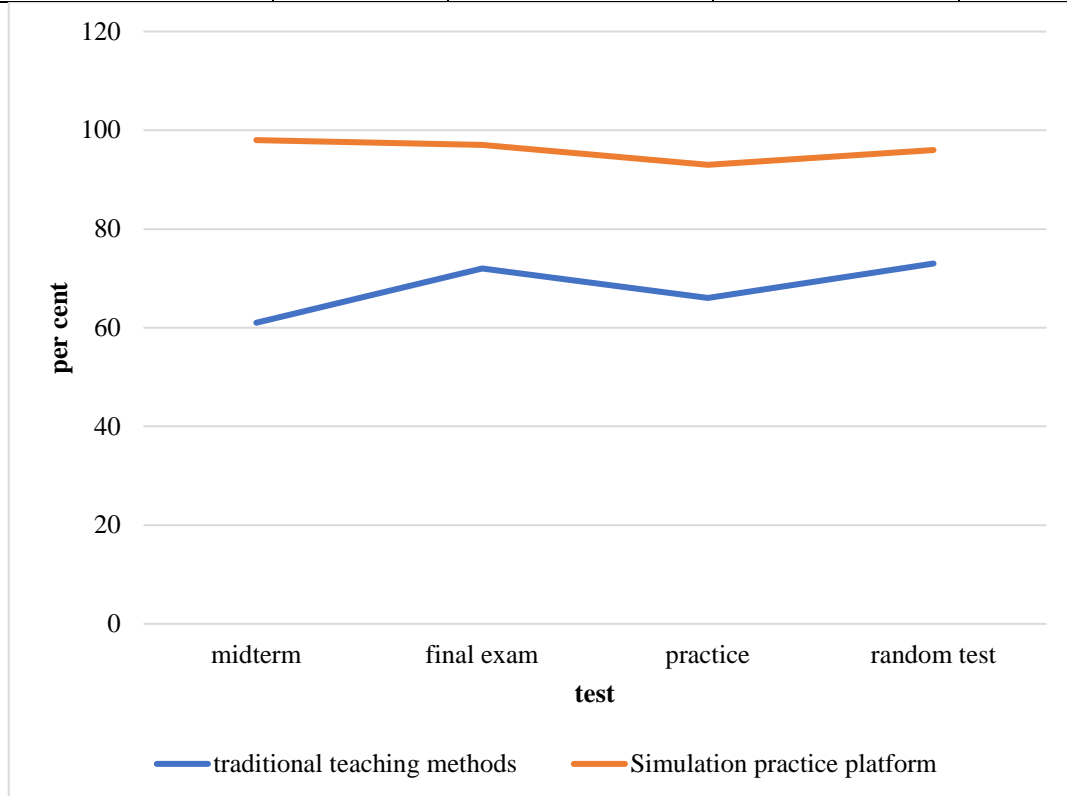
Figure 1: *Comparison of teaching quality of two teaching methods*

It can be clearly seen from Figure 1 that the passing rate of students taught by the foreign trade simulation practice technology platform is much higher than that of traditional teaching methods. As the foreign trade simulation practice technology platform is combined with practice in the teaching process, students' knowledge mastery and memory time are far longer than that of traditional teaching. The passing rate of the examination reaches about 95 points, which perfectly meets the needs of the course teaching.

4.2 Performance Test of Foreign Trade Simulation Practice Technology Platform

In this paper, 250 students were invited to conduct a parallel login experiment on the foreign trade simulation practice technology platform to test the response time of the platform system and detect whether the platform meets the needs of multi-person parallel login learning, then we drew it into table 2 through recording data.

Table 2: Response time of parallel login on the foreign trade simulation practice platform

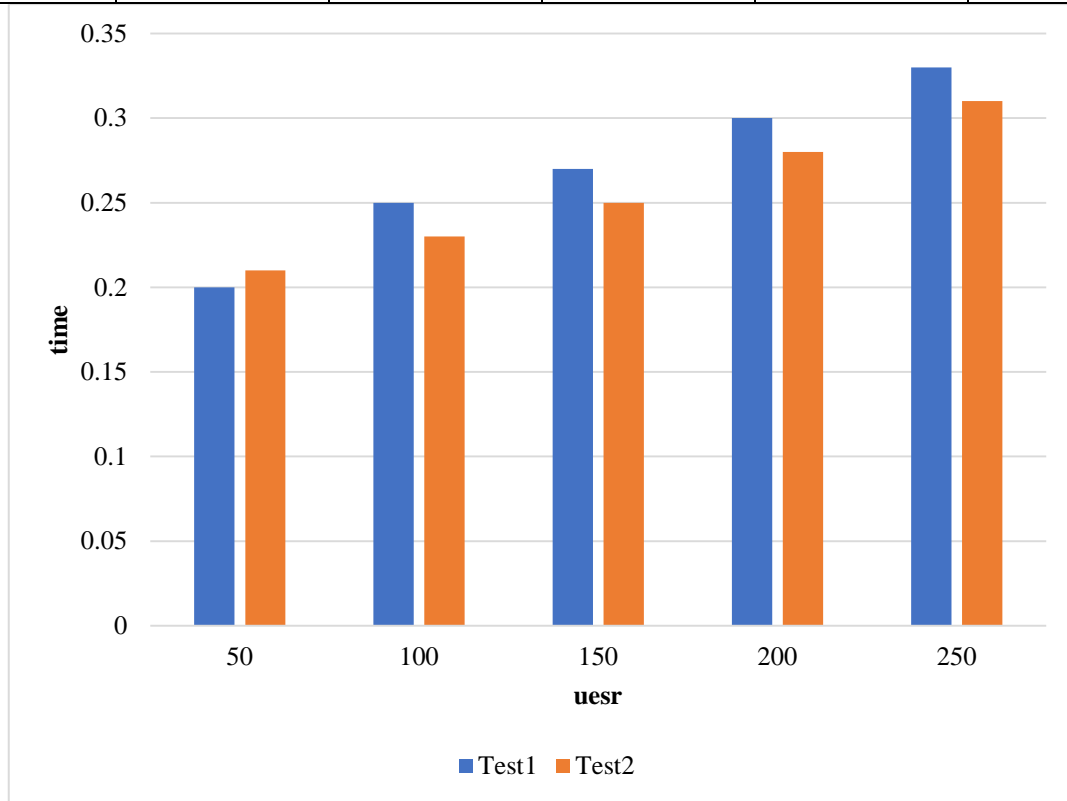|	50	100	150	200	250
Test1	0.2	0.25	0.27	0.3	0.33
Test2	0.21	0.23	0.25	0.28	0.31

Figure 2: Response time of parallel login on the foreign trade simulation practice platform

As can be seen from Figure 2, in the case of 250 parallel login, the response time of the foreign trade simulation practice platform is about 0.3s, which is fast and stable. It can meet the needs of many people teaching at the same time and better complete the classroom teaching tasks.

5. Conclusions

The foreign trade simulation practice technology platform in this paper has been developed and integrated, with strong simulation ability and can reduce the material application and reuse. It is easy to expand, easy to change the internship project and practice content, not easy to be out of date, not easy to be eliminated. It has the characteristics of saving money, time and safety, especially suitable for pluralistic and changeable vocational education. This system uses the multimedia technology, the combination of semi-physics and virtual reality. It aims to build a modern foreign trade simulation practice technology platform; to make it with the passage of time and the continuous development of science and technology; to increase the high-quality graduates; to ensure the knowledge talents and management talents to meet the economic needs and development requirements; to expand the learning time and space. The research of this platform can promote the reform of practical teaching methods, and we can cultivate students' practical ability, comprehensive quality and innovational ability.

Acknowledgements

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