

Construction of Entrepreneurship Education and Organizational Leadership Practice Platform in Colleges and Universities under the Background of Internet Plus

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Abstract. In the era of education informatization 2.0, entrepreneurship education, as an important part of the higher education system, will also conduct in-depth exploration around digital empowerment, and propose new solutions to the existing weak links and deficiencies. In this regard, this paper will take the current situation of entrepreneurship education in colleges and universities as the research object, and put forward a set of construction scheme of entrepreneurship simulation practice platform based on the lack of entrepreneurship education environment and the disconnection between theory and practice, so as to open up new entrepreneurial practice opportunities for college students and further promote the in-depth development of entrepreneurship education for college students. The platform is designed with B/S architecture, with user interface at the front end and Web server and application server at the back end. The overall functions and services are developed and deployed based on the ecological application of "internet plus innovation and entrepreneurship practice", and many simulated practice scenarios are formed by combining virtual reality technology to achieve the educational purpose of integrating knowledge and internalizing skills. Practice has proved that the platform highly restores the whole process of entrepreneurial development, effectively makes up for the shortcomings of traditional teaching mode in practical training, and is beneficial to improving students' mastery of knowledge and skills and strengthening organizational leadership and risk tolerance.

Keywords: Internet plus; entrepreneurship education; simulation practice platform; virtual reality technology; computer application

1 Introduction

As an important measure to implement the national innovation-driven development strategy, "mass entrepreneurship and innovation" has outstanding significance in lowering the threshold of traditional entrepreneurship and boosting the vitality of innovation. It is the key factor to lead the optimization of industrial structure, the development of talents' science and technology and the steady economic growth under the new normal. Behind the vigorous development of "double innovation" mode, colleges and universities play an increasingly important role as the main position for cultivating innovative and entrepreneurial talents and the meeting point of the three major elements of double innovation: science and technology,

resources and environment. Strengthening entrepreneurship education in colleges and universities is not only the mission of the times for colleges and universities to participate in the innovation-driven development strategy, but also the core connotation of realizing the high-quality development of higher education. [1]

The fundamental purpose of entrepreneurship education in colleges and universities is to enhance students' innovative spirit, entrepreneurial awareness and entrepreneurial ability. It is different from traditional professional education in emphasis, especially in course content, practical training, service guidance and so on, which needs a perfect system as support. However, the current situation of entrepreneurship education in colleges and universities mostly stays at the level of theoretical knowledge professor, and the teaching form also follows the traditional classroom teaching, lacking practical opportunities. At the same time, the shortage of professional teachers can not guide students' innovative and entrepreneurial ideas, values and spirits, which weakens students' organizational leadership and risk tolerance. [2] In view of this, according to the current research status of entrepreneurship education in colleges and universities at home and abroad, combined with Ana Luísa Rodrigues's[3] discussion on the realization method of entrepreneurship education in higher education, the influence degree of entrepreneurship education proposed by Maryono Maryono[4] and Yao Wang's[5] optimization measures of entrepreneurship education in colleges and universities under the background of "internet plus", this paper holds that colleges and universities should actively promote the organic integration of digital education technology and entrepreneurship education, and build a digital college entrepreneurship education system that adapts to the new era. The simulated practice platform of entrepreneurship in colleges and universities will take students as the main body, take "integrating theory with practice" as the guidance, reshape the whole process and all aspects of entrepreneurship education teaching activities, make up for the deficiency of traditional teaching mode from the aspects of practical training and service guidance, create a new ecology of "internet plus entrepreneurship education", and make an attempt for the modernization and intelligent construction of higher education.

2 Development process

The development process of college entrepreneurship simulation practice platform involves two technical systems. One is to complete the construction of the platform structure framework with ASP.NET as the core, and divide the front-end interactive page and the back-end server. The second is to complete the design and development of simulation practice function module with the help of 3ds Max, Unity 3D and other software.

First of all, the whole platform is B/S architecture, and the basic framework includes three parts: client, server and database. Figure 1 shows the framework of the platform structure. The server in the figure is a network server, which can receive requests sent by users from clients. Common network request protocols include HTTP, FTP, SMTP and WebSocket. [6] Taking the HTTP protocol as an example, as a typical application layer protocol, it can carry the request information in a given data format and support the server to parse the request line, request header and request body. Then the application layer in the server calls the corresponding business logic according to the request content to complete the response to the

request, and returns the response line, response body data and other contents. Finally, the presentation of the request results is completed through browser parsing and rendering.

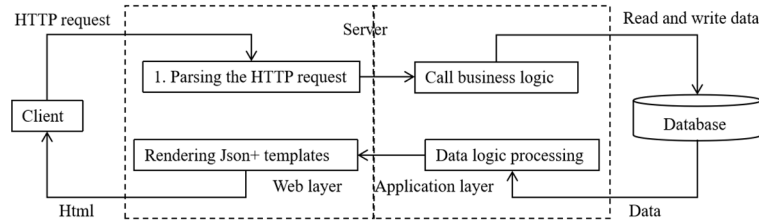


Fig. 1. Platform structure framework

Secondly, each functional module and application service in the platform will complete the deployment of each Web project and API according to the ASP.NET MVC framework, and realize the unified call and control of business logic to meet the user's requirements. Among them, the simulation practice function module needs the support of virtual reality technology, and has been developed through several steps, such as original material collection, 3ds Max modeling, scene combination production and Unity3D interactive operation design. Figure 2 shows the schematic diagram of the virtual scene in the enterprise. [7]



Fig. 2. Virtual scene inside the enterprise

After the Unity3D software is finished, WebGL will be selected for publishing, and the formed files can be directly imported into the project directory in ASP.NET to complete the deployment of the simulation practice function module. The realization of parameter transfer and instant communication between Unity3D and Web client can be completed by using WebRequest class, WebSocket class and WWW class. The following is part of the code for WebRequest class to realize the user login platform function. [8]

```
public class WebApi : MonoBehaviour
{
    public void Anime()
    IEnumerator IEPostAnime()
    {
        using (UnityWebRequest www = new UnityWebRequest())
        {
            www.url = "http://localhost:2572/api/animes";
```

```

www.method = UnityWebRequest.kHttpVerbPOST;
www.SetRequestHeader("Cookie", cookie);
else
{ Debug.Log(www.downloadHandler.text); } }
}

```

Finally, the deployment of the platform development environment is as follows: the bottom operating system is Windows10.0-64bit, the basic development environment is ASP.NET supporting .net framework 4.7.1, the development language is C#, and the integrated development tool is Visual Studio Code. The Web server is Windows IIS 10.0, and the database is SQL Server 2019. After the platform is fully developed, it will be packaged and distributed to the IIS server. After configuring the corresponding ports, users can complete the use of the system from the client browser.

3 Functional implementation

3.1 Student side

According to the platform design attributes, student users can directly enter the server address in the client browser to complete login. Student users who log in to the platform for the first time need to complete the addition of personal information according to the registration guide and obtain a unique account and password. When the student user logs in again, the platform will automatically complete the user identity authentication and automatically jump to the main scene of entrepreneurial simulation practice. After students enter the main scene, they can roam the scene through the control of mouse and keyboard. The scene includes office building, administration for industry and commerce, local taxation bureau, bureau of quality and technical supervision, trading market, bank, talent market and other institutions to restore the real social environment to a high degree.

A. Entrepreneurship plan

Student users can do entrepreneurial simulation alone or in teams. Student users can have multiple roles in the scene and correspond to different departments. Table 1 shows the information table of user roles and departments.

Table 1. User role and department information table

No.	Position	Department	Description
01	General manager	General manager's office	Fully responsible for the operation of the enterprise
02	Finance director	Finance department	Inquire about financial status and make financial analysis
03	Marketing director	Market department	Market development, multi-dimensional evaluation and analysis of products
04	Human resources director	Human resources department	Recruiting, training, and determining the organizational structure

05	Sales director	Sales department	Market forecast and investigation of sales
06	Technical director	Research and development department	Product design, research and development
07	Production director	Manufacturing department	Product production and inventory management

Student users usually start with the role of general manager, and the first thing to do is to solve the problem of renting office space. Student users can directly click on the model of the office building to enter the building and complete the lease and setting of office space. The basic scene is shown in Figure 2 above. In the company scenario, the student users will complete the preparation of the business plan and the pre-business preparation in the conference room area.

The contents of the business plan include abstract, company profile, market prospect, competitive situation, products and services, marketing, financial planning, risk prediction and internal control. [9] The platform supports student users to directly input text in the scene and export it in word format. Figure 3 shows the trend analysis of consumer prices for different types of products in the plan. In addition to the business plan, student users can also edit and specify the business plan and articles of association here, so as to provide support for the subsequent entrepreneurial practice.

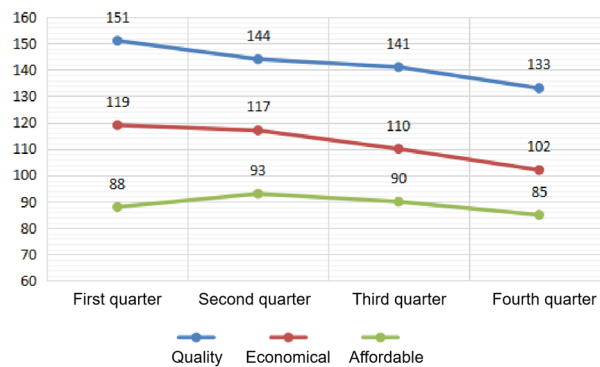


Fig. 3. Analysis of consumer price trends of different types of products

B. Entrepreneurship preparation

In the preparatory stage of entrepreneurial, student users will complete industrial and commercial registration, seal engraving, company bank account opening, and tax agency filing in turn according to the established process. Compared with the actual company registration process, the operation in the platform is relatively simple, only the key steps are highlighted, and the materials and information involved will be simplified, aiming at training students' ability to complete company registration and approve various business processes by themselves. Figure 4 shows the industrial and commercial registration scene in the simulation practice.



Fig. 4. Industrial and commercial registration scene

C. Entrepreneurship management

When the student users complete the preparatory stage of entrepreneurial, they will formally enter the implementation stage of simulated entrepreneurial practice, that is, the simulated management stage of the company. After the student users return to the company scene, they can see an overview of the company's simulated operation. The summary contents are shown in Table 2. [10]

Table 2. Overview of company simulation operations

Industry	Project	Time	Initial funds	Operation content
Production and processing	Electronic sports bracelet	1 year, 4 quarters	800000	Product research and development design, raw material procurement, plant and equipment purchase, employee recruitment, production and inventory, market development, product quotation, qualification certification, advertising, order delivery, bank loan, account discount, business analysis, etc.

The simulated operation takes the quarter as the node and is carried out one by one. At the beginning of each quarter, the student users will repeatedly perform the operation contents, and adjust the values in the operation according to the market development. Every decision made by the student users needs to be analyzed and summarized to ensure that the company maintains a balance in profitability, financial status, market performance and investment space, and reduces the risk of business failure or bankruptcy. At the end of each quarter, student users can view the quarterly reports of various departments in the general manager's office area. Figure 5 shows the product delivery in all markets in the first quarter.

In addition, the platform can also score according to the operation of student users and the effect of the company's simulated operation, which is convenient for student users to check in time and make decision-making plans for the next company development. Table 3 shows the comprehensive performance and scores of student users at the end of the first quarter.

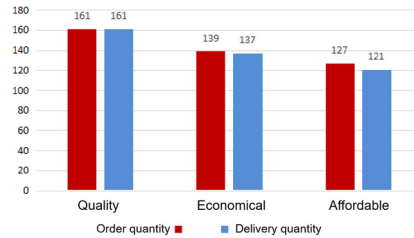


Fig. 5. Delivery situation of various products in the first quarter

Table 3. Simulated business practice scores in the first quarter

Corporate name	Profit score	Financial score	Market score	Investment score	Growth score	Comprehensive score
X031	30.027	30.802	29.214	6.617	13.742	110.402

3.2 Teacher side

Compared with the student side, the functional design of the teacher side focuses on the management and guidance of simulated practice training. After logging in to the platform, teacher users can directly create classes and groups, and divide and manage student users, so as to prepare for the subsequent simulated operation and confrontation.

In the interface of configuration setting, teachers and users adjust various environmental parameters in simulated business practice, such as tax rate, employee salary, advertising impact time limit and loan interest rate. While trying to restore the real social environment, it also introduces different variables to simulate business practice, thus enriching the decision-making choices of student users.

In addition, the platform also supports teacher users to view the operating conditions of students' companies. Teacher users can directly access the financial reports, market reports, R&D reports, management reports and human resources reports of different student companies, and compare and analyze the simulated business effects of student companies from multiple dimensions. Figure 6 shows the quarterly trend of student company's operating profit, and Figure 7 shows the comparison result of sales gross profit margin and sales net profit margin.

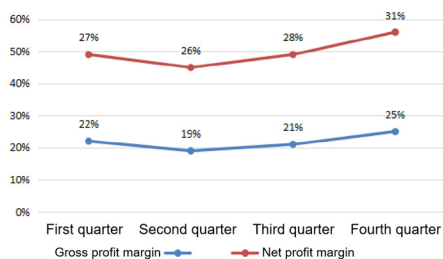


Fig. 6. Quarterly trend of operating profit

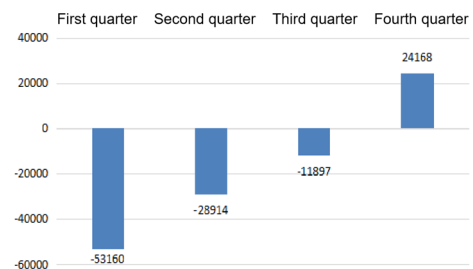


Fig. 7. Sales gross profit margin and sales net profit margin

4 Conclusions

In order to improve the effectiveness of entrepreneurship education in colleges and universities, this paper aims at the problems existing in the current education and teaching practice, such as the lack of entrepreneurship education environment, the disconnection between theory and practice, and the lack of innovation and entrepreneurship concept, value and spiritual guidance, and builds an entrepreneurial simulation practice platform based on virtual simulation. The platform reshapes the whole process and all aspects of entrepreneurship education teaching activities by virtue of diversified simulated practice scenarios, and combines theoretical knowledge, skills, organizational leadership and decision-making ability with simulated business practice as the carrier, thus realizing the innovative practice of "internet plus entrepreneurship education" mode. In the follow-up research, the platform will further enrich the application scope of virtual scenes, improve the interactivity of the platform, and provide technical support for the innovation of entrepreneurship education in colleges and universities and the improvement of entrepreneurship education system in China.

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