Research on Entrepreneurship Education of College Students for Economics and Management Majors Base on ERP

—A Case Study of Xi'an University of Science & Technology

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Abstract—Taking Xi'an University of Science and Technology as an example, this paper obtains data through questionnaire survey, carries out principal component analysis of the survey results by means of factor analysis, extracts three factors, sorts out the entrepreneurship education theory based on ERP with the combination of the ERP concept and entrepreneurship education, and puts forward, from three aspects such as professional knowledge, business skills and comprehensive quality, the theory of entrepreneurship education, which covering three different dimensions, for instance, constructing a new idea of entrepreneurship education system, establishing a diversified training system, launching various entrepreneurship competitions and expanding the second classroom of ERP entrepreneurship education and other training methods.

Keywords—ERP; Colleges and universities; Factor analysis; Entrepreneurship education

I. INTRODUCTION

With the development of Entrepreneurship Economy and the urgent demand for entrepreneurship talents from all walks of life, entrepreneurship education has been paid more and more attention by all walks of life. The 21st century will become a new era of great development of entrepreneurship economy. The Party Central Committee and the State Council attach great importance to innovation and entrepreneurship education. In 2013, General Secretary Xi stressed that the whole society should attach importance to and support youth innovation and entrepreneurship. Premier Li Keqiang also pointed out that college students should not only innovate, but also dare to start their own businesses. They should cultivate new economic motive force through mass entrepreneurship and support the development of a new future with innovation from all walks of life. On May 9, 2014, China promulgated the Notice of the General Office of the State Council on Doing Well the Employment and Entrepreneurship Work of Graduates from Universities and Colleges in China in 2014, of

which three items are about college students' entrepreneurship work. In June 2015, the State Council issued "Opinions on Several Policies and Measures for Promoting Innovation among the Mass Entrepreneurs", which put forward new requirements for innovation and entrepreneurship education for college students^[1]. At the same time, in the government work report of 2015, one of the most frequently used words is "mass entrepreneurship and innovation". In 2015, the Ministry of Education also requires colleges and universities to put employment and entrepreneurship on an important agenda. Since 2016, all colleges and universities should set up innovative entrepreneurship education courses, and set up compulsory and optional courses for all students to develop innovative entrepreneurship education, which should be included in credit management. In this context, as an important force in training high-quality talents, colleges and universities shoulder the important mission of promoting the development of entrepreneurship education and cultivating talents with comprehensive qualities of entrepreneurship. Therefore, promoting entrepreneurship education in Colleges and universities will be of great significance to the great development of entrepreneurship economy, the construction of an innovative country and the training of innovative talents.

II. RESEARCH BACKGROUND AND SUMMARY

The entrepreneurship education in China's colleges and universities has gone through an unusual road of development from scratch, from conception to realization to rapid development, which is of great significance to the cultivation of College Students' innovative consciousness and the promotion of their entrepreneurial ability. In 2016, the number of college graduates in China reached 7.65 million, an increase of 160,000 over 2015, which is called "the most difficult graduation season in history". In order to get out of this dilemma, many college students choose to start their own businesses actively or passively. In the past, due to policy,

economy, current situation and other reasons, the proportion of college students choosing entrepreneurship is not high, the success rate of entrepreneurship is low, and the scale and climate can not be formed[2]. According to the "Employment Report for Chinese College Students" issued by the MyCOS Research Institute in 2016, the proportion of self-employed college graduates in China is 1.5% in 2010, 1.6% in 2011, 2.0% in 2012, 2.3% in 2013, 2.9% in 2014 and 3.0% in 2015. Despite the rising trend year by year, the proportion of self-employed college graduates in general is still low, which is to a great extent. It reflects that the effect of entrepreneurship education in Colleges and universities still has a lot of room to improve [3]. In 2017, the Max Research Institute tracked 2.3% of the graduates of 2013 to start their own businesses, and found that only 46.2% of them continued to start their own businesses after three years, which was 2.4 percentage points lower than that of the 2012 session (48.6%). This also showed that even if college students start their own businesses, the survival rate of their own businesses should be paid attention to and the effect of their own businesses should be followed. Chang evaluated [4]. At present, entrepreneurship education has been launched in our colleges and universities. How to further build the training mode of entrepreneurship talents and strive to cultivate entrepreneurship talents, colleges and universities are also actively trying. ERP is the abbreviation of Enterprise Resource Planning (ERP). It is a tool for enterprise managers to solve enterprise management problems. It integrates enterprise logistics, capital flow and information flow into one enterprise management thought. Most colleges and universities have already set up relevant courses and experiments of ERP. Because ERP sand table course can integrate economic management knowledge, cultivate students' team spirit and entrepreneurial psychological quality [5], highly simulated experimental environment and role-playing learning mode enrich the content of entrepreneurial education of College students, cultivate and exercise them. College students' entrepreneurship quality [6], therefore, the teaching method of ERP simulation exercise course can solve most of the problems of entrepreneurship education in Colleges and universities at present [7]. In order to promote innovative education in universities, we need to adopt scientific education, scientific teaching, giving universities more autonomy, Cultivating University spirit, encouraging teachers to carry out teaching innovation, etc. [8]. Therefore, based on the ERP system, we adopt the stage-by-stage entrepreneurship education mode. ERP thought and system modular learning, ERP sand table practice and ERP comprehensive practice combined with ERP thought are helpful to college students' entrepreneurship education, and have attracted the attention of educators in practice teaching [9-10]. However, at the same time of introducing advanced enterprise ERP system, how to effectively utilize ERP ideas, integrate ERP sand table practice courses, construct new ways of entrepreneurship education, and cultivate entrepreneurship talents is still at the initial stage of exploration. Therefore, entrepreneurship education based on ERP is the direction of further research and practice.

III. RESEARCH METHODS

Xi'an University of Science and Technology, as the first batch of universities to cooperate with UFI Co., Ltd., took the lead in introducing two sets of UFI ERP manual sand tables as early as 2004, and established an ERP sand table laboratory which can accommodate 60 people at the same time. At the same time, it opened an ERP sand table simulation practice course in all undergraduate majors of management. In 2007, the course of ERP software was introduced, and in 2012, the MBA Educational Center introduced the whole course system of Kingdeer ERP to apply in MBA graduate students. At the same time, in 2007, the course "ERP Principles and Applications" was offered to undergraduates of management. In 2013, the course "Entrepreneurship Management" was offered to some colleges. In 2016, the course "Entrepreneurship Basis" was offered to undergraduates of the whole university. At the same time, all entrepreneurship education teachers have participated in relevant training. However, up to now, the traditional classroom teaching method is still used, supplemented by business canvas. As a whole, the students deal with serious problems, so the training effect is not ideal. In this regard, we have conducted a questionnaire survey on graduates and students who have started their own businesses, in order to reflect on our entrepreneurship education through the feedback of these students.

A. Questionnaire Design

Through consulting the current training curriculum system, training programs and related factors of College Students' entrepreneurship success at home and abroad, the corresponding questionnaire was designed. The questionnaire has 20 closed-ended questions. The Likert scale is used to record the scale. The respondents' evaluation attitudes from "very important" to "very important" are recorded and given 5-1 marks respectively. At the same time, on this basis, experts in relevant fields are invited to evaluate the questionnaire, and the questionnaire is revised several times according to expert opinions. Finally, the experts jointly approved that the revised questionnaire has clear entries, comprehensive content and high content validity.

B. Questionnaire Release and Recovery

A total of 547 questionnaires were sent out and 534 questionnaires were recovered, including 7 invalid questionnaires and 527 valid ones, with an effective recovery rate of 98.69%.

C. Analysis Method

In this paper, factor analysis is used to analyze the results of the survey. Firstly, the eigenvalue is more than 1. The rotation method is orthogonal rotation with maximum variance. Fourteen specific indicators, such as entrepreneurial practice, entrepreneurial basic knowledge, innovation awareness and ability, are taken as sample data. The reliability of the sample data is tested by SPSS21.0. And factor analysis. After analysis, it is found that the two indicators of "financial law related knowledge" and "basic accounting knowledge" have a low degree of similarity, so they are deleted. Secondly, the Cronbach's Alpha value of sample data is 0.792 (> 0.70), which indicates that the study has high reliability. By KMO

sampling appropriateness test and Bartlett spherical test, KMO value = 0.806, close to 0.8, indicating that the scale is suitable for factor analysis; Bartlett spherical test approximates chi-square significance probability value $p = 0.000 < 0.05$, reaching a significant level, indicating that data files are suitable for factor analysis. Finally, according to factor lithotripsy test, combined with characteristic root curve inflection and characteristic root value, the first three factors have steeper break-line gradient, and the third later factor characteristic roots are smaller, the value is less than 1, so it is more appropriate to extract three factors. After SPSS analysis, three factors are extracted from the sample according to the matrix of factor components after output rotation.

D. Factor Naming Interpretation

In this paper, the maximum variance method is used to rotate the factor load matrix orthogonally so that the factor can be named and interpreted. The factor load after rotation is output in descending order of the first factor load. Among them, the basic knowledge of management, marketing, ERP and entrepreneurship have larger load coefficients, which are 0.823, 0.810, 0.782 and 0.715 respectively, and the correlation degree is high, which is explained as the first factor of professional basic knowledge. The basic knowledge of management refers to having basic knowledge of management, being familiar with economics and management theory, and being able to analyze and solve problems with the theory. Basic knowledge of marketing refers to having basic knowledge of marketing, and being able to apply basic marketing theory to marketing practice. The basic knowledge of ERP refers to the basic knowledge of the basic principles of ERP, the ability to understand the application of ERP management concepts in enterprises and the ability to simply use ERP software. The foundation of entrepreneurship refers to having basic knowledge system and structure of entrepreneurship, being familiar with relevant policies, regulations, business tax and other knowledge of entrepreneurship.

Secondly, entrepreneurship practice, business operation ability, business plan writing ability and comprehensive analysis ability have larger load coefficients, which are 0.803, 0.751, 0.762 and 0.734, respectively, and have higher correlation, which is explained as the second factor of business skills. Entrepreneurship practice refers to the social ability,

office ability and business ability that can be improved by simulating company training, establishing company structure, analyzing business environment, trying to manage business and completing various job tasks. Business operation ability refers to the ability to skillfully operate relevant computer software, strong hands-on ability, familiar with various types of data analysis, professional software applications. Business plan writing ability refers to the ability to extract, process and transform things by writing and charting, and to write various work reports and summaries. Comprehensive analysis ability refers to the ability to analyze, distinguish, observe and study things according to their development and operation results, and to analyze data using relevant software at the same time.

Thirdly, the load coefficients of leadership, organizational and managerial competence, coordination and communication competence and innovation consciousness are 0.727, 0.710, 0.661 and 0.635, respectively, and the correlation degree is high, which is interpreted as the third factor of comprehensive quality. Leadership refers to having certain leadership knowledge and vision, which can generate personality cohesion and inspiration for a specific individual or organization, and maintain the excellent development and sustainable development of the organization. Organizational management competence refers to the knowledge of organizational behavior and strategic management, which can effectively use relevant methods to solve various problems in work. Coordination and communication ability refers to the ability to coordinate and cooperate, to master certain communication methods and skills, and to carry out good communication and collaboration with others in various ways. Innovation consciousness refers to the method that has strong innovation consciousness, can effectively adapt to the changes of external environment, and can explore and practice to solve all kinds of new business.

IV. AN ANALYSIS OF THE STRUCTURE OF ENTREPRENEURSHIP EDUCATION BASED ON ERP

Based on the above analysis results and three factors, this paper puts forward three dimensions of entrepreneurship education based on ERP, namely professional knowledge dimension (P), business skills dimension (T) and comprehensive quality dimension (Q). The specific contents of the three dimensions are shown in Figure 1.

Fig. 1 Dimensional Structure of Entrepreneurship Education Based on ERP

Combining ERP teaching to cultivate students' entrepreneurship and ability, through the above three dimensions, this paper argues that the following goals should be achieved.

A. Expanding the Application of Theoretical Knowledge

Enterprise ERP sand table simulation course is student-centered and teacher-assisted. It allows students to test their theoretical knowledge in the process of simulation operation and deepen their understanding of theory in the process of operation. This is an excellent opportunity for students to test their theoretical structure and improve their theoretical level in practice. Therefore, we should further improve the whole operation process, enrich the content of ERP sand table simulation teaching, so that students can more in-depth application of relevant theoretical knowledge.

B. Enhancing Scientific Decision-making Ability

Before the beginning of ERP course, relevant necessary sand table operation data can be released to enable students to use relevant data to make overall planning for the future development strategy of enterprises, encourage students to make scientific decisions, strategic planning and financial analysis based on data, and use financial budget situation and financial data analysis ability as evaluation system. One of the bases is to improve students' ability of scientific decision-making and data analysis.

C. Cultivating Students' Entrepreneurship Consciousness

In the current rapidly changing market environment, first of all, we need to have a keen analytical ability, the ability to capture and seize market opportunities. Through ERP sand table simulation training, the market demand of products is analyzed, market opportunities are understood according to the product development situation of rivals, so as to determine the product strategy of the enterprise, and market blank is found as the target market of the enterprise according to the market development situation of rivals. In fact, this is the process of identifying entrepreneurial opportunities. Successful entrepreneurs can discover and seize entrepreneurial opportunities in time, and choose suitable entrepreneurial opportunities for their own.

D. Cultivating Students' Psychological Quality of Entrepreneurship

In the enterprise management team, each member of the team holds different positions and performs his own duties. Therefore, each role should take the overall optimum of the enterprise as the starting point, take responsibility for each other, cooperate with each other to maximize the value of the enterprise and achieve the business objectives of the enterprise. In enterprise management, perseverance, facing setbacks, facing danger and chaos, flexible adjustment of environment mutation, etc., these psychological qualities are necessary in

any type of entrepreneurship. In ERP training, students'ability of resisting pressure and flexible response can be trained by changing rules and setting up emergencies. Power. At the same time, every training, there will be winners and losers, although it is a simulation operation, but for students'risk-taking spirit, overall planning ability and the ability to sum up experience after failure are the focus of training and training.

V. ENTERPRISE EDUCATION TRAINING MODE BASED ON ERP

The author suggests that the training methods of entrepreneurs should be designed from several levels, such as curriculum system, training system and comprehensive training.

A. Constructing the Theory Teaching System Based on ERP

This part focuses on integrating theory into practice through a variety of teaching methods and methods, so that students can have a basic understanding of entrepreneurship, thus stimulating students'creative spirit, with basic business opportunity judgment, organizational design ability, management and communication quality. Specific ways can be divided into two kinds: first, through the addition of relevant courses, to build a theoretical teaching system. The representative courses are ERP Principles and Applications, Entrepreneurship Management, Management Communication, Management, Accounting and so on. Secondly, we should set up entrepreneurship lectures, employ entrepreneurs and entrepreneurship education experts as part-time tutors. While teaching theory, we can also insert entrepreneurship lectures. On the one hand, we should integrate theory with practice, on the other hand, we can maximize the integration and development of expert resources through the personal statements of entrepreneurs and entrepreneurship experts. Use these resources to make up for the lack of classroom teaching.

B. Establishing a Diversified Training System

The practice link in Colleges and universities is an important process of integrating theory with practice, and it is also a way to train and improve the practical operational ability of College students. In terms of methods, we can adopt "manual + software". Conditional schools can first carry out manual training, such as: ERP sand table simulation training (manual disk), accounting manual simulation training, etc. Secondly, we can combine software to carry out training, such as: ERP software training, accounting computerized training, enterprise thing simulation. Training and ERP sand table simulation training (electronic disk) and so on.

From the content, firstly, it is based on the three modules of production and manufacturing, financial management and supply chain management. Secondly, it is to strengthen the concept of ERP, take the idea of sand table simulation as the main line, take the process of simulation enterprise production and operation as the center, and conduct market-oriented management. Under the business philosophy, we should integrate enterprise strategy formulation, financing, material purchasing, equipment investment and transformation, product research and development, production organization, marketing, financial accounting and management and human resources management, and strengthen the knowledge of strategic

management, marketing management, production management, financial management and human resources management. Connection and integration, in the training of students'business operation ability.

In addition, through the establishment of practical and innovative training projects for college students, relying on project declaration, they can complement the professional courses, and through the award credits, three good students and professional scholarship evaluation, etc.College students are encouraged to actively participate in the practice of innovation and entrepreneurship, so as to cultivate students'practical ability.

C. Carrying out various entrepreneurship competitions

At present, the National College Students' Challenge Cup business plan competition, China's "Internet +" College Students' innovation and entrepreneurship competition, and the National College Students' e-commerce innovation, creativity and Entrepreneurship Challenge competitions have attracted many college students. Develop students'writing ability, write their own business plan, plan business activities and so on. At the same time, after the simulation training of ERP entrepreneurship management, students can actively participate in the national entrepreneurship plan competition, get help from venture capital and other sources of funds, and realize their dream of entrepreneurship.

D. Expanding the Second Classroom of ERP Entrepreneurship Education

The most important entrepreneurship ability of college students is the core entrepreneurship ability such as leadership ability, opportunity grasping ability and innovation ability. In addition to training and teaching, ERP entrepreneurship education also needs to expand the social practical experience of the second classroom. Through organizing colorful campus entrepreneurship cultural activities, college students can understand the preferential policies of the central and local governments on College Students'independent entrepreneurship, transform potential entrepreneurship consciousness into entrepreneurship in practical activities, cultivate leadership and entrepreneurship fearless of hardship and courage to innovate and start a business, and cultivate college students' vitality. Hand skills and innovative thinking; make use of opportunities such as winter and summer vacation to find part-time jobs and internships to conduct business practice training such as visits, social surveys, etc., to help college students clarify their entrepreneurial attitudes and firm their entrepreneurial goals; be brave to try business models in social work, and college students use vacations to engage in business and company life. Practical activities such as production and labor should be integrated into the reality of social life, understand the business activities and operation modes of enterprises, and try to start a business.

Based on the above analysis, the relationship between different dimensions and different cultivation methods can be shown in Figure 2.

Fig. 2 The Relationship Between Different Dimensions and Training Methods

VI. CONCLUSIONS

Innovation and entrepreneurship education is a kind of teaching idea and mode which adapts to the needs of economic society and national development strategy. Developing innovation and entrepreneurship education in Colleges and universities and actively encouraging college students to start their own businesses are important strategic measures to serve the construction of an innovative country. Under the concept of ERP, we should establish a diversified training system, carry out various entrepreneurship competitions and expand the second classroom of ERP entrepreneurship education, so as to provide a certain direction for deepening teaching reform and training entrepreneurship talents in Colleges and universities.

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