Advances in Social Science, Education and Humanities Research, volume 416
4th International Conference on Culture, Education and Economic Development of Modern Society (ICCESE 2020)

Construction of Evaluation Index System and Fuzzy Comprehensive Assessment for College Innovation-Entrepreneurship Education*

Jianhu Zheng
Department of Economics and Management
Minjiang University
Fuzhou, China

Liping Lai
Department of Economics and Management
Minjiang University
Fuzhou, China

Zijuan Wen**
Department of Economics and Management
Minjiang University
Fuzhou, China
**Corresponding Author

***Abstract*—Innovation-entrepreneurship education is an important component, and assessment of education quality is a significant evidence of college's reform achievement. In order to acquire an operable mechanism to evaluate the effects of education reform and take corresponding methods to improve education level, an index system was constructed, which contained teaching staff, capabilities of students and environment policy. Employing analytic hierarchy process (AHP) to determine the weight of each index, a fuzzy comprehensive assessment method was adopted to evaluate the quality of Innovation-entrepreneurship education. Then, a case study was given to illustrate the proposed method with taking Logistics Engineering of Minjiang University as example. In addition, some suggestions and counter measures are put forward. The proposed method is suitable and operable, which may be used for the assessment of education quality among university, school, and professional level. An operable method, to evaluate and improve the quality of Innovation-entrepreneurship education continually, provides the guarantee for education reform of colleges.**

Keywords: innovation-entrepreneurship, education quality, evaluation index system, fuzzy comprehensive assessment

I. INTRODUCTION

In 2014, Premier Li Keqiang put forward a call for "mass entrepreneurship and innovation", and the State Council issued the "Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Colleges and Universities" and the "'The Thirteenth Five-Year Plan' for National Education Development" in 2015 and 2017 as well as a series of policy documents on innovation and entrepreneurship education reforms subsequently issued, which clearly stated that universities should strengthen innovation and entrepreneurship education reforms, and focus on cultivating students' consciousness of innovation and entrepreneurial abilities. In order to adapt to the new situation of social and economic development and actively respond to the country's innovation and entrepreneurship development strategy, universities have taken innovation and entrepreneurship education as an important part of deepening college education reform and have achieved a series of results. Compared with western developed countries, the innovation and entrepreneurship education in Chinese universities has developed relatively late, and innovation and entrepreneurship education has not yet formed a complete talent training system. What factors affect the quality of innovation and entrepreneurship education in universities, how universities should evaluate the effect of innovation and entrepreneurship education reform, and how to continue to deepen the reform of innovation and entrepreneurship education is one of the main problems faced by higher education.

Aiming at the quality evaluation of innovation and entrepreneurship education, many scholars have put forward many research results from different perspectives [1], [2]. Li Yadong and other related researches on innovation and entrepreneurship education evaluation in China and foreign countries have reviewed and comparatively reviewed and made suggestions for the evaluation of innovation and entrepreneurship education [3]. Wang Xingli analyzed the four contradictory dilemmas of the quality evaluation of college students' innovation and entrepreneurship education

*Fund: This article is a research project on innovation and entrepreneurship education teaching reform of Minjiang University, one of phased results of "Research on the Deep Integration Path of 'Creation Innovation and Enterprise Education' and Professional Education" (No. Y201904) and "Reform and Practice of 'Mass Entrepreneurship and Innovation' Integration into Professional Talent Training" (No. 20181039504).

and the reasons for them, and optimized the quality evaluation of college students' innovation and entrepreneurship education with an explanation structure model [4]. For the quality evaluation of innovation and entrepreneurship education, the main research focuses on the establishment of evaluation index systems and evaluation methods. Cheng Bo et al. took Beihang University as an example, and proposed an innovation and entrepreneurship achievement evaluation index system consisting of four dimensions of design, realization, transformation, and completion through principal component analysis [5]. Feng Yanfei et al. constructed the evaluation index system for the quality of university innovation and entrepreneurship education from the four levels of government, universities, students and society, and evaluated it with BP neural network model [6]. Chang Yu et al. established an evaluation index system consisting of four dimensions: teacher construction, curriculum system, educational achievements and entrepreneurial support, and used the AHP and fuzzy comprehensive assessment method to evaluate the quality of innovation and entrepreneurship education in design majors [7]. Qi Shuyu et al. established an evaluation index system with four first-level indicators of innovation ability, entrepreneurial awareness, entrepreneurial ability, and entrepreneurial management ability by holding an expert consultation meeting, and analyzed the evaluation of engineering students' innovation and entrepreneurial ability [8]. Huang Zhaoxin et al. established a full-chain innovation and entrepreneurship education evaluation system from the three aspects of development status, implementation process and final result, and designed a hierarchical and classified quality evaluation scheme [9]. Jia Jianfeng et al. constructed a Kirkpatrick evaluation index system based on the response layer, the learning layer, the behavior layer, and the result layer, and evaluated the quality of college innovation and entrepreneurship education from the perspective of consumers [10]. Wang Xueying et al. used the TOPSIS model based on entropy weight to evaluate the quality of innovation and entrepreneurship education in universities, and conducted empirical analysis with 5 universities in Liaoning Province [11]. Zhu Guiying et al. built an evaluation index system for innovation and entrepreneurship education from three aspects: the "mass entrepreneurship and innovation" environment, the "mass entrepreneurship and innovation" input, and the "mass entrepreneurship and innovation" output [12]. Xu Xiaozhou proposed a VPR innovation and entrepreneurship education evaluation structure model with value-process-result as the core based on the grounded theory [13].

Throughout the existing research results, scholars have evaluated the quality of innovation and entrepreneurship education in universities from different perspectives, but they mainly focus on the overall evaluation of the school, and seldom evaluate the quality of professional innovation and entrepreneurship education. This article intends to study the evaluation of the quality of innovation and entrepreneurship education in universities from the perspective of the integration of professional education and innovation and entrepreneurship education. Taking logistics engineering as an example, this article analyzes the evaluation of innovation and entrepreneurship education and points out countermeasures to further deepen the quality of innovation and entrepreneurship education.

II. CONSTRUCTION OF EVALUATION INDEX SYSTEM

"Mass entrepreneurship and innovation" education is a complex and systematic project. The factors that affect the effectiveness of innovation and entrepreneurship education are complex and diverse. They are not only related to teachers and students, but also closely related to the social environment and related policies.

A. Dimension of teaching body

University innovation and entrepreneurship education is a brand-new educational idea, which needs to be reformed from a series of links such as personnel training positioning, professional training program design, curriculum system reconstruction, practical teaching reform, teaching method and teaching content innovation, and educational evaluation method reform. Therefore, cultivating a teaching team capable of innovation and entrepreneurship education is the primary task of universities. For the construction of innovation and entrepreneurship teachers, most universities rely mainly on the existing professional teachers to carry out relevant innovation and entrepreneurship education and knowledge training. Many colleges and universities have established innovation and entrepreneurship colleges, and have selected or brought in some teachers specializing in innovation and entrepreneurship education. The Ministry of Education has also begun to establish a library of innovation and entrepreneurship mentors, and universities may occasionally invite relevant innovation and entrepreneurship mentors to give lectures and training to school teachers and students. Therefore, the innovation and entrepreneurship teaching team should comprehensively consider the overall structure and level of school teachers, and require teachers to have a solid professional theoretical foundation and knowledge of innovation and entrepreneurship, have strong scientific research capabilities and teaching levels, and have certain innovation and entrepreneurship practice experience. In addition, it also requires teachers to be able to integrate innovation and entrepreneurship education with professional education to comprehensively cultivate students' spirit of innovation and entrepreneurship.

The innovation and entrepreneurship ability of university teachers can be summarized as follows: first, the level of theoretical knowledge. Theoretical knowledge includes professional theoretical knowledge and theoretical knowledge of innovation and entrepreneurship. The level of theoretical knowledge of teachers is an important factor affecting the teaching ability of innovation and entrepreneurship. Teachers' professional education background and training of innovative and entrepreneurial knowledge are important basis for measuring the theoretical knowledge level of teachers. Second, scientific research ability: teachers' scientific research ability is the concrete manifestation of teachers' innovation ability, which mainly

includes scientific research projects hosted and participated by teachers, published academic papers, invention patents and other scientific research results. Third, teaching ability: teaching ability refers to the ability of a teacher to impart the knowledge of the profession and the theory of innovation and entrepreneurship to students through the use of certain teaching means and teaching methods [14]. Fourth, innovation and entrepreneurship experience: innovation and entrepreneurship refers to the ability to actively use existing professional theoretical knowledge, scientifically explore unknown areas, creatively analyze and solve unknown things, and be able to take innovation results to the ground and apply them to practice in life. College teachers need to focus on the integration of production and education, actively carry out innovative research in response to social and corporate needs, and encourage students to actively participate in innovation and entrepreneurship activities and actively cultivate students' innovative spirit and entrepreneurial awareness.

B. Dimensions of students' learning ability

Students are the main training objects of innovation and entrepreneurship education. Good student resources, students' growth process, innovation and entrepreneurship awareness, learning initiative and enthusiasm, and family background all affect the effect of innovation and entrepreneurship education. The student's learning process is the most important factor in the effectiveness of innovation and entrepreneurship education. Even if the student source and family background are not conducive to students' innovation and entrepreneurship, if the school's innovation and entrepreneurship education methods are effective and students' learning initiative and enthusiasm are high, a good innovation and entrepreneurship education effect will also be achieved. The evaluation of the effect of innovation and entrepreneurship education on the student dimension can be results-oriented, including subject awards, academic papers and innovation and entrepreneurship projects, patent inventions, and student entrepreneurship rates and so on.

C. Environmental policy dimension

The innovation and entrepreneurship environment policy is related to the initiative and enthusiasm of college students in innovation and entrepreneurship. The environmental policy is mainly divided into two aspects: on-campus environmental policy and off-campus environmental policy. The school's environmental policies include the setting of the innovation and entrepreneurship curriculum system and credit recognition standards, innovation and entrepreneurship training bases, innovation and entrepreneurship incentive policies, and innovation and entrepreneurship support policies. Off-campus environmental policies include government support policies for entrepreneurship and entrepreneurial market environment. Universities' innovation and entrepreneurship education is not an independent system, but a whole that integrates with the social innovation and entrepreneurship environment, market, culture and policies. The internal and external campus environmental policies of schools interact and promote each other [15].

D. Establishment of evaluation index system

Factors influencing the quality of innovation and entrepreneurship education mainly involve the three dimensions of teachers, students' learning ability and environmental policy. Other factors such as the economic strength of students' families and the social status of entrepreneurs will also affect students' initiative and enthusiasm. From the perspective of universities, it is mainly to consider the evaluation index with strong operability. Based on the existing research results and the actual situation of colleges and universities, an innovation and entrepreneurship education quality evaluation index system consisting of three dimensions of teacher team, student learning ability, and environmental policy and 13 secondary indicators was constructed, as shown in "Fig. 1".

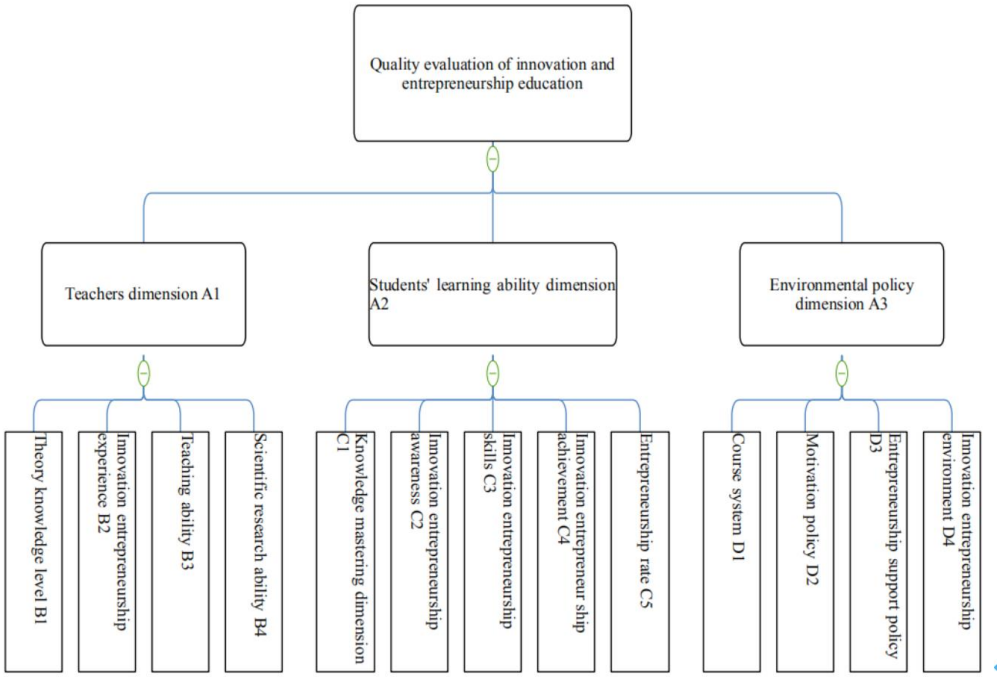

Fig. 1. Quality evaluation index system of innovation and entrepreneurship education.

III. FUZZY COMPREHENSIVE ASSESSMENT OF EDUCATION QUALITY

In order to explain the application of the quality evaluation index system of innovation and entrepreneurship education, this article takes the logistics engineering specialty of Minjiang University as an example to evaluate the quality of innovation and entrepreneurship education in this specialty, in order to analyze the deficiencies, and then clarify the direction and measures for deepening innovation and entrepreneurship reform.

A. Determination of evaluation index weights

The AHP is used to determine the weight of the evaluation index of the quality of innovation and entrepreneurship, and then the fuzzy comprehensive assessment method is used with reference to the 1-9 scale method. 1, 3, 5, 7, and 9 are different degrees of importance, and their respective meanings are equally important, slightly important, obviously important, much more important, and extremely important; 2, 4, 6 and 8 are between two adjacent degrees of importance. Relevant experts (experts in this article are professional teachers) are invited to compare the three primary indicators and 13 secondary indicators to obtain a primary indicator judgment matrix ("Table I") and three secondary indicator judgment matrixes ("Table II", "Table III" and "Table IV").

TABLE I. JUDGMENT MATRIX FOR FIRST-LEVEL INDICATORS

	A_1	A_2	A_3
A_1	1	3	3
A_2	1/3	1	2
A_3	1/3	1/2	1

TABLE II. JUDGMENT MATRIX OF TEACHERS' TEACHING ABILITY

A_1	B_1	B_2	B_3	B_4
B_1	1	4	2	3
B_2	1/4	1	1/2	1/2
B_3	1/2	2	1	4
B_4	1/3	2	1/4	1

TABLE III. JUDGMENT MATRIX OF STUDENTS' INNOVATION AND ENTREPRENEURSHIP

A_2	C_1	C_2	C_3	C_4	C_5
C_1	1	2	2	5	6
C_2	1/2	1	2	5	5
C_3	1/2	1/2	1	4	5
C_4	1/5	1/5	1/4	1	2
C_5	1/6	1/5	1/5	1/2	1

TABLE IV. JUDGMENT MATRIX OF INNOVATION AND ENTREPRENEURSHIP ENVIRONMENT

A_3	D_1	D_2	D_3	D_4
D_1	1	1/2	2	3
D_2	2	1	4	5
D_3	1/2	1/4	1	2
D_4	1/3	1/5	1/2	1

The method for calculating the weight of indicators at various levels using AHP is as follows:

If the $W=(w_1,w_2,\cdots w_n)$ is the weight vector and a_i is the index in the judgment matrix, then

$$W_i=\frac{1}{n}\sum_{j=1}^{n}\left(a_{ij}\Big/\sum_{k-1}^{n}a_{kj}\right)$$

Its maximum characteristic root is:

$$\lambda_{\max}=\frac{1}{n}\sum_{i=1}^{n}\left(\sum_{j=1}^{n}a_{ij}\cdot\frac{w_j}{w_i}\right)$$

The calculated consistency ratio is:

$$CR=CI/RI$$

The consistency indicator is:

$$CI=(\lambda_{\max}-n)/(n-1)$$

The index of the average random consistency index RI is shown in "Table V". The smaller the value of the consistency ratio CR is, the better the consistency of the judgment matrix is. Generally, the $CR<0.1$ is considered to have satisfactory consistency. The index weight and consistency check results are shown in "Table VI". All four judgment matrices meet the consistency check requirements.

TABLE V. VALUES OF AVERAGE RANDOM CONSISTENCY INDICATOR RI

N	1	2	3	4	5	6	7	8	9
RI	0	0	0.58	0.89	1.12	1.24	1.32	1.41	1.46

TABLE VI. INDEX WEIGHT AND CONSISTENCY TEST RESULTS

Primary indicator	Weight	Consistency check	Secondary indicators	Weight	Consistency check
Teachers dimension A_1	0.5936	$CI=0.0268$ $CR=0.0515<0.1$	Theoretical knowledge level B_1	0.4515	$CI=0.0655$ $CR=0.0735<0.1$
			Innovation and entrepreneurship experience B_2	0.1047	
			Teaching ability B_3	0.3072	
			Scientific research ability B_4	0.1366	
Students' learning ability dimension A_2	0.2493		Mastery of knowledge C_1	0.3903	$CI=0.0340$ $CR=0.0303<0.1$
			Innovation and entrepreneurship awareness C_2	0.2874	
			Innovation and entrepreneurship skills C_3	0.2059	
			Innovation and entrepreneurship achievement C_4	0.0685	
			Entrepreneurship rate C_5	0.0479	
Environmental policy dimension A_3	0.1571		Course system D_1	0.2641	$CI=0.0070$ $CR=0.0079<0.1$
			Incentive policy D_2	0.5068	
			Entrepreneurship support policy D_3	0.1428	
			Innovation and entrepreneurship environment D_4	0.0863	

B. Fuzzy comprehensive assessment of education quality

The evaluation of the quality of innovation and entrepreneurship education is a vague subjective judgment process. When it comes to the quality evaluation of entrepreneurship education in universities, departments and majors, various methods can be used to give the scores of various evaluation indicators. This article uses a 5-level Likert scoring method to score 13 secondary indicators, the number from 1 to 5 indicating that the quality is very low to very high. Taking logistics engineering as an example, 10 professional teachers are invited to grade the indicators of the quality of innovation and entrepreneurship education; the Likert score of each indicator is multiplied by the corresponding number of people and the final score of each secondary indicator is obtained on average. For example, the score of the theoretical knowledge level B_1 in the teachers dimension is:

$$B_1 = (1\times 0 + 2\times 1 + 3\times 4 + 4\times 3 + 5\times 2)/10 = 3.6$$

The scores of other indicators are shown in "Table VII".

TABLE VII. QUALITY EVALUATION INDEX SCORES OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN LOGISTICS ENGINEERING

Primary indicator	Secondary indicators	Very low	Relatively low	General	Relatively high	Very high	Score
Teachers dimension A_1	Theoretical knowledge level B_1	0	1	4	3	2	3.6
	Innovation and entrepreneurship experience B_2	3	4	2	1	0	2.1
	Teaching ability B_3	0	3	4	2	1	3.1
	Scientific research ability B_4	0	1	5	3	1	3.4
Students' learning ability dimension A_2	Mastery of knowledge C_1	1	3	4	2	0	2.7
	Innovation and entrepreneurship awareness C_2	2	2	4	2	0	2.8
	Innovation and entrepreneurship skills C_3	1	3	3	3	0	2.8
	Innovation and entrepreneurship achievement C_4	0	3	3	4	0	3.1
	Entrepreneurship rate C_5	2	3	4	1	0	2.4
Environmental policy dimension A_3	Course system D_1	0	1	3	5	1	3.6
	Incentive policy D_2	0	1	2	3	4	4.0
	Entrepreneurship support policy D_3	1	2	3	3	1	3.1
	Innovation and entrepreneurship environment D_4	1	2	5	2	0	2.8

According to the calculated index weights and the corresponding index scores, a single-level fuzzy evaluation is performed first, taking the teacher team dimension as an example,

$$B = W_i R_i^T = (0.4515, 0.1047, 0.3072, 0.1366) \times (3.6, 2.1, 3.1, 3.4)^T = 3.3376$$

Among them, the W_i is the indicator weight and the R_i is the indicator score.

By the same token, the dimension of students' learning ability is: $C = 2.8884$, and the dimension of environmental policies is: $D = 3.6623$.

Finally, the fuzzy comprehensive assessment is calculated as:

$$A = (0.5936, 0.2493, 0.1571)(3.3376, 2.8884, 3.6623)^T = 3.2766$$

It can be seen from the evaluation results that the overall quality of innovation and entrepreneurship education in logistics engineering is between medium and high, with a high score on the environmental policy dimension, followed by a teacher team dimension, and a relatively low score on the student learning ability dimension.

IV. CONCLUSION

The evaluation of the quality of innovation and entrepreneurship education is an important means to test whether the reform of innovation and entrepreneurship education in universities is effective, as well as the starting point and standpoint of the next stage of deepening innovation and entrepreneurship education reform in universities. Through the evaluation of the quality of innovation and entrepreneurship education, it is possible to find out the existing deficiencies in education reform, clarify the direction and sequence of innovation and entrepreneurship education reform, gradually promote and implement innovation and entrepreneurship education, integrate innovation and entrepreneurship education with professional education, and cultivate compound application talents that meet social needs and corporate needs.

The evaluation of innovation and entrepreneurship education should be based on the evaluation index system. It can evaluate the quality of innovation and entrepreneurship education for the entire school, department and specialty. This measure can not only compare and analyze the education quality of schools and other universities, but also compare and analyze the quality of innovation and entrepreneurship education between departments and majors, in order to identify gaps and implement the idea of deepening innovation and entrepreneurship education reform. The measures of universities to deepen innovation and entrepreneurship reform are as follows:

The first is to form a consensus of teachers and students on innovation and entrepreneurship education. The purpose of college innovation and entrepreneurship education reform is to cultivate application-oriented talents with innovative spirit and practical ability. Innovation and entrepreneurship education is just as important as professional education. It must not be isolated. Innovation and entrepreneurship education must be integrated into the entire process of professional education. Schools should make overall plans for the reform of innovation and entrepreneurship education, and set up specialized institutions for unified management, such as the School of Innovation and Entrepreneurship. Schools should strengthen the construction of a policy system for innovation and entrepreneurship, create a good environment for innovation and entrepreneurship, formulate a comprehensive quality evaluation and feedback mechanism, and form a thorough guarantee mechanism for the implementation of innovation and entrepreneurship.

The second is to plan the curriculum system of innovation and entrepreneurship. The most direct manifestation of innovation and entrepreneurship education in colleges and universities is the professional talent training plan, and the training goal should be clearly defined in the training plan. Therefore, constructing a reasonable curriculum system and fully integrating innovation and entrepreneurship education into professional talent training programs is the primary task for colleges and universities to deepen innovation and entrepreneurship education reform. Through four years of uninterrupted innovation and entrepreneurship education, the deep integration of professional education and innovation and entrepreneurship education has been implicitly promoted. Efforts should be paid to strengthen the practical teaching link and attach importance to the second course education, so that students can independently choose course learning and personalized development according to their own strengths and interests, which can fully stimulate students' initiative and enthusiasm for innovation and entrepreneurship learning, further strengthen the cultivation of innovation spirit and practical ability, and comprehensively promote the organic integration of professional education and innovation and entrepreneurship education.

The third is to perfect implementation guarantee and feedback mechanism. The implementation of innovation and entrepreneurship involves factors such as teachers, students, and teaching resources. To successfully advance the innovation and entrepreneurship education reform process formulated by the school, it is necessary to formulate relevant management systems and guarantee mechanisms and plan a scientific and reasonable guarantee mechanism in terms of educational philosophy, curriculum system, teaching staff, incentive mechanism, and talent quality evaluation. The innovation and entrepreneurship education aims to improve the quality of talent training. Whether to achieve the expected training goals requires the use of scientific quality evaluation methods, and feedback of the evaluation results to the school and all teachers and students so as to achieve continuous improvement of the innovative and entrepreneurial education situation. "Mass entrepreneurship and innovation" talent training is a process that focuses on cultivating students' innovative spirit and entrepreneurial consciousness. The assessment of it depends not only on the results, but also on the process. The school's teaching department and the School of Innovation and Entrepreneurship comprehensively evaluate and give feedback, and provide suggestions and suggestions for improvement of the personnel training plan and classroom construction leaders to form a continuous improvement mechanism for the implementation and evaluation of innovation and entrepreneurship.

REFERENCES

[1] Fang Debin, Huang Benxiao, Yin Yongfei. Research on Teaching Evaluation of Innovation Ability Training for Engineering Management Students. Journal of Beijing Institute of Technology (Social Science Edition), 2010, 12 (3): 135-140 (in Chinese)

[2] Qin Bo. Research on the Path of College Students' Innovation and Entrepreneurship Education from the Perspective of the New Era [J]. Journal of Southwest China Normal University (Natural Science Edition), 2018, 43 (8): 143-147 (in Chinese)

[3] Li Yadong, Zhu Weiwen. Research on the Evaluation and Monitoring of University Innovation and Entrepreneurship Education. China Higher Education Research, 2019, (1): 48-52 (in Chinese)

[4] Wang Xingli. Contradictions, System Optimization and Innovation Measures of Quality Evaluation of College Students' Innovation and Entrepreneurship Education. Education and Occupation, 2018, (4): 68-72 (in Chinese)

[5] Cheng Bo. Discussion on the Evaluation Mechanism of University Students' Innovation and Entrepreneurship Achievements —Taking Beihang University as an Example. Beihang University, 2017, 30 (6): 97-101 (in Chinese)

[6] Feng Yanfei, Tong Xiaoling. Models and methods for evaluating the quality of innovation and entrepreneurship education in research universities. Journal of Huazhong Agricultural University (Social Science Edition), 2013, (1): 122-128 (in Chinese)

[7] Chang Yu, Shi Shuya. Evaluation of Innovation and Entrepreneurship Education in Design Majors Based on AHP-FCE Model. Innovation and Entrepreneurship Education, 2017, 8 (6): 23-29 (in Chinese)

[8] Qi Shuyu, Fang Yaoyao. Construction and Design of Evaluation Index System for Innovation and Entrepreneurship of Engineering Students. Science and Technology Management Research, 2017, (24): 68-74 (in Chinese)

[9] Huang Zhaoxin, Huang Yangjie. Exploration on Quality Evaluation of Innovation and Entrepreneurship Education. Educational Research, 2019, (7): 91-101 (in Chinese)

[10] Jia Jianfeng, Yao Xusheng. Design of Evaluation System for University Innovation and Entrepreneurship Education. Journal of Northeastern University (Social Science Edition), 2019, 21 (1): 82-88 (in Chinese)

[11] Wang Xueying, Liu Xinze. Quality Evaluation of University Innovation and Entrepreneurship Education Based on Entropy Weight TOPSIS Model. Journal of Shenyang Normal University (Social Science Edition), 2018, 36 (1): 47-51 (in Chinese)

[12] Zhu Guiying, Yuan Yuping, He Dong, Ding Yanqing, Yu Hui. Construction of Higher Education Evaluation Index System Based on "Mass Entrepreneurship and Innovation". Innovation and Entrepreneurship Education, 2018, 9 (3): 29-31 (in Chinese)

[13] Xu Xiaozhou. VPR Structural Model for Evaluation of Innovation and Entrepreneurship Education. Educational Research, 2019, (7): 83-90 (in Chinese)

[14] He Yulin, Wang Zaixin, Yang Lianfa. Construction of the Evaluation System of College Teachers' Innovation and Entrepreneurship Education Teaching Ability Against the Background of "Mass Entrepreneurship and Innovation". Higher Education, 2018, (1): 4-5 (in Chinese)

[15] Xu Zhandong, Mei Qiang, Li Hongbo, Yang Daojian. Research on Environmental Evaluation of University Innovation and Entrepreneurship Education in the "Mass Entrepreneurship and Innovation" Situation. Technology Economy and Management, 2018, (4): 37-42 (in Chinese)