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Research on the Construction of the Evaluation System of Innovation and Entrepreneurship Education in Inner Mongolia Universities

Zhihua Li[1], Ling Kang[2]

[1] Philippine Christian University Center for International Education, Manila City 1006, Philippine. E-mail: lizhihua2013@163.com

[2] Inner Mongolia Honder College of Arts and Sciences, Hohhot 010000, Inner Mongolia, China.

Abstract: As the main position of higher education, local colleges and universities, constructing a scientific and reasonable innovation and entrepreneurship education system and establishing a standardized and effective innovation and entrepreneurship education mechanism and guarantee system has become an urgent problem that needs to be urgently solved for innovation and entrepreneurship education. The critical work at present is to construct an evaluation system. This paper adopts questionnaire survey method and AHP method to establish an evaluation system with 4 levels, 15 secondary indicators and 27 tertiary indicators.

Keywords: Inner Mongolia Universities; Innovation and Entrepreneurship Education; Evaluation System

1. Introduction

Innovation is the soul of a nation's development and progress, and entrepreneurship is the theme of the development of the times. This new economic situation and strategic development requires students with innovation and entrepreneurial ability, digital thinking and cross-border entrepreneurship. This new economic situation and strategic development requires high quality composite cross-cutting talents with innovation and entrepreneurial ability, digital thinking and cross-border integration ability. As the main base of higher education, local colleges and universities should build a scientific and reasonable innovation and entrepreneurship education system, establish a standardized and effective innovation and entrepreneurship education mechanism and guarantee system, effectively improve the innovation and entrepreneurship ability of college students, and cultivate qualified innovation and entrepreneurship talents for the society and the country, which has become an urgent problem for innovation and entrepreneurship education.

This research studies the construction of the evaluation system of innovation and entrepreneurship education in 53 colleges and universities in Inner Mongolia among vocational colleges and undergraduate colleges; The content of innovation and entrepreneurship education system: organization and management institutions, policy system, subject system, faculty team, guidance and service platform, incentive system; this research mainly evaluates the content of innovation and entrepreneurship education system, this evaluation system is convenient for colleges and universities to find out the gaps and shortcomings. This study mainly evaluates the content of innovation and entrepreneurship education system.

2. Review of domestic and foreign research status

The evaluation methods in foreign countries are relatively mature. There are two methods of evaluating innovation and

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entrepreneurship education in the United States: one is to objectively assess and rank universities on seven factors; Among the indicators are: research and development of dual-innovation courses, research achievements of teachers, innovation and entrepreneurship education projects, external academic connections, social influence of universities, the number of successful alumni and the creation of new enterprises by graduated alumni, comparing the input of dual-innovation courses with the output of the results of teachers and students. Another method of measurement focuses on entrepreneurship and innovation, where the indicators are:dual-innovation course programs, number of courses, organizational structure, human resources, scholarship coverage, and student entrepreneurial organizations.

Some scholars use questionnaires in their current evaluation methods, which only analyses the situation of a sample of institutions and are not widespread and universal; Hierarchical analysis method, fuzzy comprehensive evaluation method; the majority of the research focuses on students' participation and awards; From the perspective of practical promotion and application, the calculation process of the current research method is too complicated and cumbersome, and the utilization rate is low. ISM explains the structural model, constructs the evaluation model out of multiple influencing factors and interrelationships, and establishes four quality evaluation dimensions: Basic quality evaluation, core quality evaluation, process quality evaluation and outcome quality evaluation; 26 quality observation points are established and 4 stages are implemented throughout the innovation and entrepreneurship education process.

Summarizing the research methods of domestic researchers, the current evaluation methods, including theoretical analysis, case study method, hierarchical analysis method and fuzzy synthesis method; The main directions are: on the one hand, collecting relevant influencing factors and indicators from regional key and typical universities, students, teachers' groups and relevant experts, using questionnaire survey method, collating and summarizing the indicators about evaluation; On the other hand, developing some evaluation indicators, and use model methods such as hierarchical analysis and fuzzy comprehensive evaluation methods to pick and test the reasonableness and weight of relevant indicators. The variation in the relevant methods is the indicators selected, and the focus of the indicators is on students, teachers, etc. Inconsistency in the selection of indicators in different regional studies, whose evaluation systems are not broad and universal.

3. Data andmethod

This study visited universities in Hohhot, and the main subjects of questionnaire distribution were students enrolled and graduated students in Inner Mongolia universities. And 452 online questionnaires were distributed to 20 undergraduate colleges and universities, of which 17 were invalid and 435 were valid, with an efficiency rate of 96% ; 1066 questionnaires were distributed to 29 specialist colleges and universities, of which 11 were invalid and 1055 were valid, with an efficiency rate of 99% . The innovation and entrepreneurship education of the specialist and undergraduate colleges were summarized and analyzed respectively.

In order to achieve the high quality of innovation and entrepreneurship education, universities in Inner Mongolia need to combine the existing problems in the current system and mechanism, and build a set of testing system from four levels, namely students, schools, teachers and society, in order to guarantee the efficient development of innovation and entrepreneurship education. There is an urgent need to establish an objective evaluation system to guarantee the development of innovation and entrepreneurship education.

Six experts on innovation and entrepreneurship in Inner Mongolia were contacted and their opinions were sought using online and offline methods; by examining and analyzing questionnaire data on multiple indicators proposed by the experts and after discussing and measuring them, the evaluation indicators were finally determined to be divided into four levels, 15 secondary indicators and 27 tertiary indicators. Using the hierarchical analysis method AHP, the 27 tertiary indicators were scored and analyzed, and finally the weights of the 27 indicators were analyzed using SPSS software, and passed the consistency test. The results of this analysis are shown in Table 1 below.

Table 1. Quality evaluation index system of innovation and entrepreneurship education in Inner Mongolia universities

School level (17.067%)	Curriculum system construction (3.946%)	combined with professional courses (1.628%)
		Number of courses (1.435%)
		Number of credits (0.883%)
	Teaching and learning management (1.223%)	Number of service providers (1.223%)
	campus culture construction(3.481%)	The annual number of competitions and lectures organized on campus (2.153%)
		Number of innovative and entrepreneurial societies (1.328%)
	Safeguards (8.417%)	Average annual amount of funds invested (4.959%)
		Number of encouragement and support policy documents (3.458%)
Teacher level (16.833%)	teaching staff (3.346%)	Number of teachers (1.999%)
		Ratio of title structure (lecturer and above) (1.347%)
	Teaching methods(1.393%)	Teaching inspection teaching methods score (1.393%)
	Teaching effectiveness (5.946%)	Number of projects and published papers (1.738%)
		Overall ranking of teaching inspections (1.166%)
		Start rate of innovative and entrepreneurial courses (3.042%)
	Selection of textbooks (0.779%)	Availability of standardized textbooks (0.779%)
	Credit hour schedule (1.294%)	Number of course hours (1.294%)
	Teaching ability (4.075%)	Number of teaching skills competitions attended(1.522%)
		Number of teaching skills competitions won (2.553%)
Student level (43.158%)	Participation in competitions (8.108%)	Average grade of awards per year (3.685%)
		Average number of awards per year(4.423%)
	Innovation and entrepreneurship Ability (25.815%)	practical experience(9.854%)
		Number of achievements (10.767%)
		academic performance (excellent, moderate, good, poor pass) (5.194%)
	Awareness of innovation(9.235%)	Willingness of students to participate (9.235%)
Social level (22.944%)	School-enterprise cooperation (15.584%)	Number of school-enterprise cooperation (7.197%)
		Number of industry-university-research cooperation projects(8.387%)
	Funding (7.36%)	Average annual amount of investment funds (7.36%)

One of the three levels of indicators has a score developed for uniform units and quantitative criteria. The three levels are selected as relatively quantifiable indicators, with specific indicators having a value of 0-1; Without relevant content, the value is 0; with relevant content, the value is 1; The quantitative values for the award rankings are 1st class: 1, 2nd class: 0.8, 3rd class: 0.6, below 3rd class: 0.4 and participation: 0.2.

The quantitative values of the teaching rankings for the two semesters in a year are summed and the quantitative values of the teaching rankings for each semester are the top 1/3 of the total number of students: 0.5, the top 2/3 of the total number of students: 0. 3 and the bottom 1/3 of the total number of students: 0.2.

The quantitative values of students' performance in innovation and entrepreneurship education and teachers' scores in teaching methods assessment are: excellent (above 90): 1; medium (above 80): 0.8; good (above 70): 0.6; pass (above 60): 0.4; poor (below 60): 0.2.

The amount of funds invested by the school and the community is measured in tens of thousands of yuan, e.g. a value of 10,000 yuan is 1 and a value of 200,000 yuan is 20.

The score of the evaluation index system of innovation and entrepreneurship education is denoted by S. The weight of the three-level indicators is denoted by K_i , the specific data of the three-level indicators of each institution is denoted by C_i , $i = 1,2,....27$, so the score of the evaluation index of each institution is $S = \sum_{i=1}^{27} K_i C_i$.

4. Conclusion and discussion

4.1 Validation of the evaluation system

Two institutions are selected for validation: Vocational College: Inner Mongolia College of Commerce and Trade; Undergraduate University: Inner Mongolia University of Finance and Economics.

This study visited the heads of the innovation and entrepreneurship education departments of the two institutions in the field to find out the specific data of the third level indicators of these two institutions, and calculated the scores of the two institutions respectively using the formula of the evaluation system. The score of innovation and entrepreneurship education in Inner Mongolia College of Commerce and Industry is calculated to be 9; The score of innovation and entrepreneurship education in Inner Mongolia University of Finance and Economics is 25. In comparison between the two institutions, Inner Mongolia University of Finance and Economics has priority over Inner Mongolia College of Commerce and Industry in terms of institutional mechanism construction and guarantee system.

4.2 Research prospects and shortcomings

The application of this evaluation system requires the scoring of experts in the universities; In the process of scoring and quantifying, it is difficult to avoid the problem that the experts cannot cover all the institutions at the same time, and the understanding of each expert may be different, and the inconsistency in the development degree of innovation and entrepreneurship education in different levels of universities leads to the inconsistent views of the experts; therefore, the current evaluation results are subject to long-term verification.

This paper argues that the short-term effect of innovation and entrepreneurship education in universities depends on quantity and quality, which can be tested by quantifying the relevant numbers; However, the long-term development effect requires a longer period of dynamic tracking and testing, while some indicators in its evaluation are relatively complex.

The evaluation system currently designed is suitable for analyzing the innovation and entrepreneurship education of a certain node of universities, facilitating the search for gaps between institutions and discovering the shortcomings in their development process. In the future development path of innovation and entrepreneurship education, universities should constantlysummarize and learn from each other to complement each other's shortcomings and advance together; we should gradually improve the quality of innovation and entrepreneurship education in colleges and universities in Inner Mongolia, improve the institutional mechanism of innovation and entrepreneurship education, and improve the guarantee system of innovation and entrepreneurship education, etc. Only in this way can our innovation and entrepreneurship education play a key role in improving the quality of talent cultivation in local universities, serving the local economy and social construction, and meeting the self-development of college students.

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