

# *Research on the Evaluation System of "Four in One" Innovation and Entrepreneurship Education in Applied Undergraduate Colleges*

Saipeng Xing\* a,b

a: School of business administration,  
Zhongnan University of Economics and Law  
b: School of Management,  
Wuhan Technology and Business University  
Wuhan, China

Qinxian Chen

School of Economics and Management,  
Wuchang Shouyi University  
Wuhan, China

Weihui Du

School of logistics,  
Wuhan Technology and Business University  
Wuhan, China

**Abstract**—The establishment of the evaluation system of innovation and entrepreneurship education in application-oriented universities is of great significance for promoting the implementation and operation of innovation and entrepreneurship education and improving the quality of talent cultivation in application-oriented universities. However, the evaluation system of innovation and entrepreneurship education in application-oriented universities is not perfect. Based on analysis of theory and experience of innovation and entrepreneurship evaluation, this paper constructs the "four in one" evaluation system of innovation and entrepreneurship education in applied undergraduate colleges. The purpose is to solve the practical problems of evaluation and monitoring the innovation and entrepreneurship education quality in applied undergraduate colleges, and guide improvement of innovation and entrepreneurship education quality through policy guarantee evaluation, talent cultivation mode evaluation, students' ability quality evaluation and social evaluation.

**Keywords**—*applied undergraduate colleges; four in one; innovation and entrepreneurship education; evaluation system*

## I. INTRODUCTION

In the 1980s, the United Nations Educational, Scientific and Cultural Organization (UNESCO) proposed the brand-new concept of "entrepreneurship education" for the first time. At present, innovation and entrepreneurship education has become an educational form and concept in the era of knowledge economy and it has become the mainstream of social development to extensively develop innovation and entrepreneurship education in colleges and universities [1].

Entrepreneurship education began in China in the late 20th century: in 2004, the Ministry of Education designated nine universities as the pilot schools for entrepreneurship education [2]. In May 2015, the State Council promulgated the "Opinions on the Implementation of Deepening Innovation and Entrepreneurship Education Reform in Colleges and Universities", which clearly put forward the basic principles of

"Facing the Whole, Teaching by Classification, Combining Specialty and Strengthening Practice" [3]. As an educational concept and model, innovation and entrepreneurship education has become an important breakthrough in the comprehensive reform of higher education. Innovation and entrepreneurship education is a new educational paradigm initiated by the government, promoted by colleges and universities, supported by the society, and participated by students and played its main role. Through the linkage of these systems, innovative and entrepreneurship education series courses and students' entrepreneurship practice activities are used as means to train students' innovative consciousness and entrepreneurship, and enhance students' innovative and Entrepreneurship ability [4]. Establishing an effective indicator system and creating a method for evaluating the quality of the innovation and entrepreneurship education address the urgent need for facilitating the comprehensive reform of the higher education and for nurturing talents with a pioneering spirit [5].

Applied undergraduate colleges are a new type of undergraduate colleges and universities based on serving local socio-economic development goals and training high-quality applied talents [6]. Establishing the evaluation model and index system of innovation and entrepreneurship education in applied undergraduate colleges and universities is of great significance to promote the implementation and operation of innovation and entrepreneurship education and to improve the quality of personnel training in applied undergraduate colleges and universities. However, the innovation and entrepreneurship education in application-oriented undergraduate colleges is still in its infancy. There are many difficulties and problems, such as the lagging of the concept of innovation and entrepreneurship education, the shortage of teachers and the lack of supporting resources, which are largely caused by the imperfection of the quality assurance and evaluation system of innovation and entrepreneurship education.

Foundation Project: Host: Xing Saipeng, "provincial teaching research project of Hubei Province in 2017" (project number: 2017479); Host: Chen Qinxian, "teaching reform and research project of China Logistics Society in 2017" (project number: JZW2017114).

Therefore, building a scientific, systematic and dynamic evaluation index system and accelerating the construction of innovation and entrepreneurship education system in China have become the key issues of innovation and entrepreneurship education in applied undergraduate colleges.

## II. ANALYSIS OF THE CURRENT SITUATION OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLIED UNDERGRADUATE COLLEGES AND UNIVERSITIES

Applied undergraduate colleges and universities are a new type of undergraduate colleges, which are based on serving the local social and economic development goals and cultivating high-quality application-oriented talents [7]. They are an important force in training innovative and entrepreneurship talents. In terms of personnel training mode, application-oriented undergraduate colleges and universities aim at adapting to the needs of the society and attach importance to the cultivation of students' technical application ability and practical ability. The problems of innovation and entrepreneurship education in applied undergraduate colleges and universities are mainly reflected in the following aspects:

Firstly, the combination of innovation and entrepreneurship education and specialty is not enough. Generally speaking, the application-oriented undergraduate colleges have not effectively implemented the talent training program throughout the entire innovation and entrepreneurship education system. The combination of innovation and entrepreneurship education curriculum and professional education is not close enough, and the characteristics are not obvious.

Secondly, the synergy between industry, university and research is not enough. At present, the application-oriented undergraduate colleges attach great importance to the cooperation between industry, university and research, but the interest community between the two has not formed, which results in the low enthusiasm of enterprises to participate in enterprise-to-school innovation and entrepreneurship activities, and the synergy effect has not been fully exerted.

Thirdly, there is a shortage of double-qualified teachers. Most of the teaching staff of applied undergraduate colleges have theoretical teaching quality, while the "dual-teacher and dual-competent" teachers with practical teaching quality are in serious shortage. The introduction and cultivation of "dual teachers and dual abilities" teachers is the key to the construction of applied teachers.

Fourthly, assessment criteria are too single. In the current exam-oriented education environment, students lack the ability to solve practical problems and can not face up to their professional skills. The single evaluation management mode based on results and scores still has the limitation of quantitative problems, which seriously restricts the further development of innovation and entrepreneurship education. Institutions of higher learning attach too much importance to innovation and entrepreneurship achievements, pursue short-term behavior, judge the success or failure of entrepreneurship on the basis of the number of entrepreneurs and the success rate of entrepreneurship. Innovation and entrepreneurship

education is not geared to all students, resulting in the lack of popularization of innovation and entrepreneurship activities on campus [8]. A scientific, rational and standardized quality assurance and evaluation system has not yet been formed, which is the root of the difficulty of innovative entrepreneurship education to open up the situation [9].

## III. PROBLEMS IN THE EVALUATION OF INNOVATION AND ENTREPRENEURSHIP EDUCATION

The academic circles have made a wide range of research on the evaluation of innovation and entrepreneurship education, and have achieved fruitful results. At the same time, it has been proved that the organic unity and integration of objectives and processes, quantification and quality, evaluators and evaluators is the basic experience of the professional development of education evaluation, and the trend of future development. There are some shortcomings in domestic scholars' research on evaluation of innovation and entrepreneurship [10].

Firstly, the systematic research is insufficient. Most researchers avoid the evaluation model and directly construct the index evaluation system. They simply replace the discussion on the construction of the evaluation system with the construction of the index system. They do not regard the evaluation of innovation and entrepreneurship education as complete system engineering.

Secondly, the evaluation method is relatively single. With the diversification of innovation and entrepreneurship education model, its evaluation methods also show a diversified development trend. More and more theories and methods of other disciplines are introduced into the field of innovation and entrepreneurship education evaluation, and the evaluation methods change from single-oriented to multi-integration.

Thirdly, we pay too much attention to the evaluation of results. The research results of educational evaluation model applied in the field of innovation and entrepreneurship education evaluation should be more about the evaluation of the whole process of innovation and entrepreneurship education, rather than the evaluation of results or level at a certain time.

Fourthly, excessive attention should be paid to the evaluation of economic benefits. The effect of innovation and entrepreneurship education is time-lagging. It is unscientific to evaluate innovation and entrepreneurship education only by using the number of enterprises and jobs created. The change from economic benefit to individual effectiveness evaluation is to return the evaluation of innovation and entrepreneurship education to the essence of education.

## IV. EVALUATION SYSTEM OF "FOUR IN ONE" INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLIED UNDERGRADUATE COLLEGES AND UNIVERSITIES

Based on an in-depth analysis of the key factors affecting innovation and entrepreneurship education in applied undergraduate colleges, this paper proposes a "four-in-one" innovation and entrepreneurship evaluation system from four

aspects: policy guarantee evaluation, talent training model evaluation, students' ability and quality evaluation and social evaluation (as shown in figure. 1).

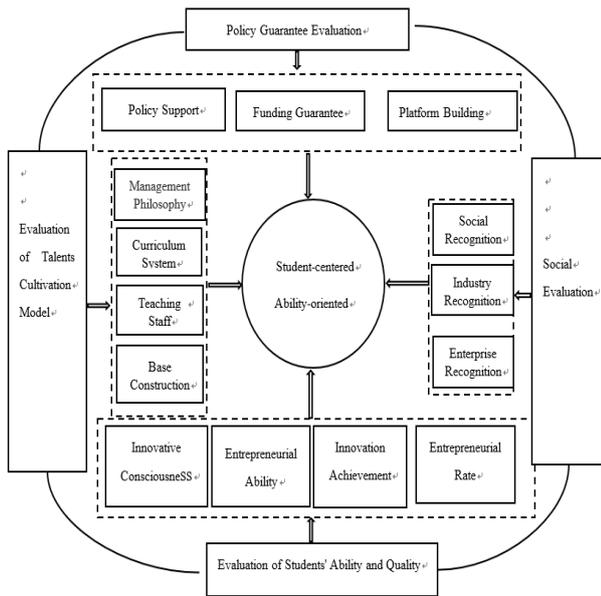


Fig.1. Framework of innovation and entrepreneurship education evaluation system in applied undergraduate colleges

A. Subsystem of Policy Guarantee Evaluation

As a policy maker, the government directly influences the development of innovation and entrepreneurship education in application-oriented undergraduate colleges by fostering innovation and entrepreneurship education policies, investing funds and building platforms. Government incentive policy mainly refers to the government's special support for innovation and entrepreneurship. Funding is also an important indicator to judge the degree of attention and support of external environment to innovation and entrepreneurship education, mainly in the form of special funds and foundations [11]. The platform is the important carrier of the "four in one" innovation and entrepreneurship education management system. Applied undergraduate colleges can rely on school-enterprise cooperation, integrate high-quality social resources, strengthen the carrier construction of practice platform, competition platform and service platform as a whole, thus releasing the multiplier benefits of innovation and entrepreneurship education.

B. Subsystem of Talent Training Evaluation Model

The evaluation system of talent cultivation mode in applied undergraduate colleges and universities commences from four aspects: management philosophy, curriculum system, teaching staff and base construction.

Firstly, management philosophy: the orientation and emphasis of students'innovation and entrepreneurship education directly affect the development effect of innovation and entrepreneurship education.

Secondly, curriculum system: the establishment of integration curriculum system of innovative entrepreneurship education and professional education Innovation and

entrepreneurship education is the extension of professional education, and professional education is the deep foundation of the development of innovation and entrepreneurship education, which is deeply related to the breadth, depth and sustainability of future development [12].

Thirdly, teachers' guarantee: full-time teachers of innovative entrepreneurship education are the main body of practice activities of innovative entrepreneurship education and the implementers of innovative entrepreneurship education activities. Teachers' individual quality has an important impact on the quality of innovation and entrepreneurship education and school running efficiency. With the development of innovation and entrepreneurship education, the teaching staff of innovation and entrepreneurship education more and more clearly reflects the quality requirements of this team. They should have not only the theoretical knowledge of innovation and entrepreneurship and solid professional foundation, but also the corresponding practical experience of innovation and entrepreneurship. They should have both the ability of social activities and the ability of technological innovation, transformation and promotion, but also understand the basic law of education and have the teaching ability of innovative entrepreneurship education [12]. Teacher construction investment is an important part of the evaluation system. It mainly depends on the proportion of teachers who have entrepreneurial experience, who have engaged in technical work and enterprise management, the proportion of teachers whose research results are transformed into economic benefits, and the proportion of teachers whose invention patents are quoted [14].

Fourthly, base construction: the cultivation of innovation and entrepreneurship ability is created in practice, with the focus on increasing the proportion of practical teaching and creating innovative and entrepreneurship characteristic courses of cooperation, openness and sharing. This requires application-oriented undergraduate colleges to strengthen school-enterprise cooperation and build a stable practice base as a guarantee.

C. Subsystem of Evaluation of Students'Ability and Quality

The evaluation of students'ability and quality mainly reflects the following aspects:

Firstly, innovation consciousness: it mainly depends on the reflection of innovation and entrepreneurship education and other teaching, assessment of students' learning method innovation, work method innovation, self-management innovation, and conceptual innovation of activities.

Secondly, entrepreneurship: entrepreneurship is an important basis to measure the quality of talent training, and is the most core element of the evaluation system. It mainly examines whether students have the necessary ability to start a business, to accept and understand new technologies related to the direction of the business, to master knowledge and to apply laws and regulations, to capture the market, and to apply professional technology.

Thirdly, innovative achievements: the assessment indicators are mainly the reflection of their learning specialty, including the number of professional scientific research

achievements, the number of professional invention patents, the number of product innovations, the innovative effect of business models, the innovative effect of management, the innovative situation of new technologies, etc.

Fourthly, entrepreneurship rate: it reflects the proportion of entrepreneurs to all graduates, and can objectively reflect the effectiveness of innovation and entrepreneurship awareness training. It mainly examines the number of entrepreneurship of school students and past graduates since implementation of the innovation and entrepreneurship education. The more professional assessment is to pay attention to entrepreneurship projects.

#### *D. Subsystem of Social Evaluation*

Social evaluation is generally an evaluation of the external state of innovation and entrepreneurship education in Applied Undergraduate Colleges by organizations and societies outside the government. Social evaluation can be evaluated from social recognition, industry recognition and enterprise recognition. Social acceptance is to evaluate the actual effect of innovation and entrepreneurship education in applied undergraduate colleges from a social perspective. It comprehensively examines students' professional ability, comprehensive quality and social service ability. It also reflects whether the family is satisfied with their children's innovation and entrepreneurship education, and whether the students' professional ethics and social service level are recognized by the society. Enterprise acceptance is mainly reflected in the employer's assessment of students' work responsibility, team spirit, technical contribution, etc. Innovation ability is evaluated by employers. Industry acceptance is more involved than enterprise acceptance, which is mainly reflected in the evaluation of students' innovation ability at the industry level. As for the measurement of social evaluation, we can make a comprehensive evaluation by tracking survey, interviewing the employers and conducting questionnaires, etc.

#### V. CONCLUSION

To sum up, innovation and entrepreneurship education in Applied Undergraduate Colleges and universities can cultivate students' innovation and entrepreneurship consciousness and spirit through innovation and entrepreneurship practice, quality assurance and evaluation system mechanism, and improve their ability and quality of innovation and entrepreneurship. Only by constantly amending and perfecting the quality assurance and evaluation system and providing stable support for the sustainable development of innovation and entrepreneurship education, can the teaching quality of innovation and entrepreneurship education be fundamentally improved. Because of the characteristics of innovation and entrepreneurship education, we can carry out the feasibility study of introducing authoritative third-party institutions as evaluation subjects, construct a dynamic evaluation mechanism with social evaluation and industry evaluation as the main body, guide the development of education evaluation in the direction of specialization, and gradually weaken the current strong administrative dominant color.

This paper constructs the "four in one" evaluation model of innovative entrepreneurship education in applied undergraduate colleges, aiming to play a guiding role in promoting innovative entrepreneurship education and cultivating innovative entrepreneurship talents through policy guarantee evaluation, talent training model evaluation, students' ability quality evaluation and social evaluation.

#### REFERENCES

- [1] S. J. M. Harkema, and H. Schout, "Incorporating student-centred learning in innovation and entrepreneurship education", *European Journal of Education*, vol. 43, pp. 513-526, November 2008.
- [2] Tian Xia, Zhang Shumin, and Wu Yifeng, "Status Quo and Outlook of the Studies of Entrepreneurship Education in China: Statistics and Analysis Based on Papers Indexed in CSSCI (2004-2013)", *Chinese Education & Society*, vol.49, pp. 217-227, May-June 2016.
- [3] Y. Zhang and R. Jing. A Study of Improving the Competitiveness of Local Undergraduate Colleges[J]. *International Journal of Education and Management Engineering*. 2012, 2(7):16-21.
- [4] Wen Na, Tian Xianzong, and Fu Binghong, "Construction of Performance Evaluation Index System of Innovation and Entrepreneurship Education in Colleges and Universities," *Heilongjiang Education*, vol. 1, pp.56-59, January 2018. (in Chinese)
- [5] Yuan Yuan, Zhang Huixiang, Wang Jin, and Li Xiaoping, "A Research on the Quality Evaluation of the Innovation and Entrepreneurship Education at Chinese Universities Based on Linguistic Operators", *Educational Sciences Theory & Practice*, vol.18, pp. 1210-1223, May 2018.
- [6] Xing Saipeng, Tao Meisheng, Chen Qinxian, and Chen Xianyou, "Study on the Evaluation Criteria of 'Double-Teacher' Teachers in Applied Technology-oriented Undergraduate Colleges," *Vocational and Technical Education*, vol. 36, pp.45-48, February 2015. (in Chinese)
- [7] Essaid EL HAJI, Abdellah Azmani, Mohamed El Harzli. Using FAHP in the Educational and Vocational Guidance[J]. *International Journal of Modern Education and Computer Science*, 2018, 10(12):36-43.
- [8] Hu Chuili, "Research on Quality Assurance and Evaluation System of Innovation and Entrepreneurship Education in Applied Undergraduate Colleges," *Innovation and Entrepreneurship Education*, vol. 8, pp.16-19, August 2017.(in Chinese)
- [9] Jiang Deqin, "On the Construction of Quality Evaluation System of Innovation and Entrepreneurship Education in Colleges and Universities," *Innovation and Entrepreneurship Education*, vol. 6, pp.1-4, December 2015. (in Chinese)
- [10] Wang H. Survey and Thinking on Entrepreneurship Education of Local College Students[J]. *International Journal of Education and Management Engineering*. 2012, 2(8):25-30.
- [11] Hu Zhengming, "Research on the Construction of Evaluation Index System of Innovation and Entrepreneurship Education in Higher Vocational Colleges", *China Vocational and Technical Education*, vol. 8, pp.72-77, March 2018. (in Chinese)
- [12] Li Yi, "Research on the "Five in One" Innovation and Entrepreneurship Education Management System in Higher Vocational Colleges," *China Vocational and Technical Education*, vol.36, pp.101-105, December 2018. (in Chinese)
- [13] Guo Ru, and Lan Xin, "Research on the Evaluation System of Innovation and Entrepreneurship Education in Higher Vocational Colleges," *Journal of Xiamen City Vocational College*, vol.20, pp.34-40, April 2018.(in Chinese)
- [14] Li Bing, "Research on the Evaluation System of 'Four in One' Innovation and Entrepreneurship Education in Higher Vocational Colleges," *China Vocational and Technical Education*, vol.28, pp.78-80, October 2015.(in Chinese)