



# Construction of Industry-University-Research-Application System under the Background of Mass Entrepreneurship and Innovation Education

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## Abstract

In recent years, entrepreneurship and innovation education has become an important theme in the reform and deepening of China's education system. Based on the analysis of the current situation of China's economic reform and social development, this paper fully analyzes and verifies the practical significance of entrepreneurship and innovation education, as well as the curriculum content, education system, application system and other practical problems existing in the existing development. Combined with the policy guidance and the main resource advantages of all parties, this paper puts forward the optimization countermeasures and suggestions on the construction of the production, teaching, research and application system of the entrepreneurship and innovation education and the application level of the educational achievements, so as to provide some reference for the development and deepening of China's entrepreneurship and innovation education.

## Subject Areas

Education, Entrepreneurship

## Keywords

Entrepreneurship and Innovation Education, Production, Study and Research, System Building

## 1. Introduction

At present, China's economy is facing the transformation and industrial struc-

ture rotation is inevitable development, from the traditional production factor input industry to innovative technology industry is the only way of the new journey of China's economy. How to realize the upgrade technology, high quality and economic development, is bound to promote China's own innovation ability and industrial technology content, avoid because of lower labor and resources into the economic slowdown, and double gen education is the education level that gradually cultivates students' innovation ability and relevant social groups, their awareness of the important paths, and give full play to the Chinese popular innovation entrepreneurship policy coordination together [1].

In 2018, China clearly put forward the work guidance on focusing on creating the "upgraded version" of entrepreneurship and innovation, and building a high-quality development of entrepreneurship and innovation system. In view of the current lack of the ecological development of entrepreneurship and innovation, as well as the practical problems in enterprise application, education promotion and other aspects, it is urgent to deepen the improvement of the innovation and innovation education system, the construction of innovation and innovation resource platform, and the application of production, education and research in combination with the development of various regions. With education as the cutting-edge, we will gradually establish a new force for innovation and Entrepreneurship of China's mass entrepreneurship and innovation system, and continue to export comprehensive application talents with innovation ability and entrepreneurship awareness [2].

## **2. Research on the Background and Significance of the Deepening Development of Current Entrepreneurship and Innovation Education**

### 1) Guidance at the policy level

China's Ministry of Education put forward about the university actively carry out double gen education as well as the opinions of the college students' entrepreneurship guidance, in view of the current Chinese education reform and deepen has carried on the preliminary strategic ideas, double gen education from the macro is accord with China's current economic development stage and social need, should be double the education for all students to continue to promote education; In 2016, the Ministry of Education further issued guidance on the work of innovation and entrepreneurship for college graduates, pointing out that colleges and universities should set up entrepreneurship and entrepreneurship education courses, do a good job in the provision of relevant professional teachers and curriculum, and strengthen the scientific guidance and education of innovation and entrepreneurship education for college students. In March 2018, the Ministry of Finance took the lead in issuing guidance on the implementation and liberalization of the policy on discount interest loans for social entrepreneurship, providing a relaxed financing environment for social entrepreneurship. In September of the same year, China issued the guidance on the "up-

graded version” of high-quality development of mass entrepreneurship and innovation, which clarified the eight measures to effectively promote social employment, scientific and technological innovation, financial services and other aspects of mass entrepreneurship and innovation in the current development background. In recent years, China has continuously promoted and deepened the development of mass entrepreneurship and innovation education and its practice at the policy level to guide the rapid growth of mass entrepreneurship and innovation education.

### 2) Demand for industrial and social development

China’s economic output has entered the stage of industrial rotation, the real economy and the original traditional processing and manufacturing are facing continuous innovation, the extended development of new industries for innovative talents urgent demand, supply and demand dislocation caused by structural social employment problem is more and more obvious. Meanwhile, the number of college graduates reached a new high of 8.34 million in 2019, making the employment situation grim. The implementation and deepening of entrepreneurship and innovation education, on the one hand, through the output of new innovative applied talents, promote the deepening of China’s current supply-side reform, accelerate the extended development of innovative industries, and effectively promote the high-quality development strategy of China’s economy; On the other hand, through innovation and entrepreneurship education, the foundation of entrepreneurship and mass entrepreneurship and innovation of college students can be cultivated, and the current social employment situation in China can be optimized from the perspective of supply and demand, so as to alleviate the development dilemma of mismatch between supply and demand in college education.

### 3) The trend of economic supply reform and transformation

China’s economy is at the key point of the supply system reform. The mode of production and industrial structure have shifted from traditional resource input to scientific and technological innovation. Innovation has become an important foundation for China’s future economic development. The 13th Five-Year Plan calls for the gradual construction of an industrial structure with innovation as the core, and innovation as the foothold of industrial development. Innovation has become an important driving force for China’s economic output in the context of the new era as China gradually advances and deepens its development strategies of supply-side reform, high-quality economic development, and innovative industrial output. China’s current economic structure, rely on the factors of production inputs and backward processing manufacturing still accounts for a large part of the economic dimension, globalization and China’s deepening of aging population greatly limit the economic output of the Chinese traditional industry, want to achieve the new national economy, will inevitably to the tech industry, creative industry transformation, mass entrepreneurship and innovation education has become an important foothold and development point under

this economic trend [3].

### 3. Analysis of the Current Situation and Problems of Mass Entrepreneurship and Innovation Education

#### 1) Courses and scenes are separated from practice

At present, entrepreneurship education is still confined to the single entrepreneurship education or career planning, which leads to the two phenomena of entrepreneurship education and professional education theory learning and entrepreneurship practice activities [4]. The integration of entrepreneurship education resources and elements in schools is insufficient, and the management organization of entrepreneurship education is slack and weak. In such aspects as teachers curriculum construction of experimental platform lack systemic propulsion, double the education goal is to improve college students' innovative practice ability, to promote and support for the current college students' entrepreneurship, however the target yield rate is still low at present, innovation, entrepreneurship education in view of the practical application of the scene to clear hierarchy, category, stage setting, leads to the double education lack of practical significance, even most of the colleges and universities of double gen education stays in the level of career planning and employment guidance, and double the education purpose serious from the core. Part of colleges and universities will double gen education synchronization combined with specialized courses, required courses, have good propulsion, but is still theory course is more, combine with the practice of the industry, technology update less, entrepreneurship education in higher vocational colleges innovation services mainly to hatch, in the basic support for innovation entrepreneurship is still less, how to make creative education in higher vocational colleges platform really play a role and reflect its value, still need to think deeply about education researchers.

The curriculum of entrepreneurship education is not reasonable. China most colleges and universities is not setting professional related to entrepreneurship, most colleges and universities is the entrepreneurship education courses as a free from the professional curriculum of elective courses, students and their own professional correlation is not strong, did not fully realize the double gen education its essence and significance, purely for the purpose of teaching behavior, of course, no combined with enterprise applications and industry development needs corresponding constructing double gen education curriculum content, leading to the current education curriculum practical significance is relatively limited, reduced the institutions and the enthusiasm of student organization, participate in course.

#### 2) The resources of entrepreneurship and innovation education in Colleges and universities are weak

At present, due to the development stage, start-up and system construction and other reasons in China's entrepreneurship and innovation education, colleges and universities' own professional teachers are still relatively weak. Some

colleges and universities' Entrepreneurship and innovation teachers are part-time teachers related to psychology, politics or economy, and even are taught by counselors, so the overall content of entrepreneurship and innovation education is limited. In addition, due to the professionalism of teachers, the professional quality of the teachers is limited As well as the reasons for curriculum setting, entrepreneurship and innovation education is still in the early theoretical stage, lack of practice and training of relevant skills, and the limitations of education methods greatly affect the realization of education effect, and at the same time, the lack of practicality in classroom teaching affects the enthusiasm of students.

3) The implementation mechanism of entrepreneurship and innovation education is not perfect

Entrepreneurship and innovation education lies in the particularity of its educational content, so the construction of a good education mechanism is of great significance. At present, the production, teaching, research and application system, which is the core of mass entrepreneurship and innovation education, has obvious separation among production, research and education, and the imperfect implementation mechanism leads to serious defects in the system, which cannot form incentives through the transmission of interests between chains, which has a significant obstacle to the cultivation of entrepreneurship and innovation talents. In addition, in the scientific research education system, the lack of motivation for R&D innovation and sustainable development makes it difficult to form sustainable innovation output. However, the independence of discipline education in Colleges and universities has certain restrictions on the introduction of external innovation resources, and the related resources such as teachers and funds cannot be well integrated and shared.

4) Lack of transformation and verification of educational achievements

The existing entrepreneurship and innovation education is limited to the instability of the main body collaborative relationship and the existing lack of the production, teaching, research and application system. The entrepreneurship and innovation education still stays in the one-sided development of theory and early education, lacks the education guidance oriented by the application enterprise and social demand, and is limited to the implementation of innovation and entrepreneurship action, and has not formed the transformation and verification of innovation and entrepreneurship achievements. It is meaningless that there is no innovation oriented by the business needs of enterprises. The construction of mass entrepreneurship and innovation education system has not been formed by many subjects, and there is a lack of practice verification link in the education chain, which obviously deviates from the goal and original intention of entrepreneurship and innovation education.

The transformation and verification of the results of entrepreneurship and innovation education is an important support in the process of constructing and deepening the entrepreneurship and innovation education system, and is the

practical goal and final significance of implementing the entrepreneurship and innovation education has lost its practical significance, which greatly limits the enthusiasm and initiative of carrying out and deepening the entrepreneurship and innovation education in various regions. It is the focus of the improvement and improvement of the mass entrepreneurship and innovation education system.

#### **4. Construction of Production, Teaching, Research and Application System of Entrepreneurship and Innovation Education Based on Background**

Entrepreneurship education in higher vocational colleges innovation platform construction is not just a few in entrepreneurship, business seminars, several scientific and technological innovation competition several times, but we'll need to fully understand the characteristics of the area, industry characteristics and advantage of education resources, seek to the bilateral interests of each stakeholder, the depth of the integration of production resources, and take the concept of industrial technology and resources into course system, technology innovation, the activities of design, practice and double in the construction of teachers, promote the link between the key elements and dialogue, make social resources and education resources effective docking. At the same time, the innovation and entrepreneurship talents, applied scientific research achievements and mass entrepreneurship and innovation achievements cultivated by colleges and universities will be brought to the industry, so as to form a two-way interworking ecosystem featuring the integration of industry and education and innovation and entrepreneurship. Therefore, the platform construction of innovation and entrepreneurship education in higher vocational colleges should focus on the integration of industry and education, and build an integrated platform integrating curriculum system, technology research and development, industrial cultivation, innovative projects, entrepreneurial community activities and the construction of double-qualified teachers.

1) Cooperation between industry, research and education, highlighting the practical application of mass entrepreneurship and innovation

Mass entrepreneurship and innovation education should not be an elite education that only serves a few people. Mass entrepreneurship and innovation education is a basic education for all the public on the awareness of innovation and entrepreneurship and the cultivation of practical ability, so as to effectively improve the quality of education in China's basic universities. The cultivation of innovative and entrepreneurial talents should be market-oriented and with cross-border thinking, so as to open up channels between universities, industries and enterprises, and form a production, research and teaching integration and coordination system among all parties involved in mass entrepreneurship and innovation education. In addition, the setting and implementation of entrepreneurship and innovation education courses is the core carrier to achieve the

goals of entrepreneurship and innovation education. Scientific and practical courses of entrepreneurship and innovation education should be built based on the resource advantages of each participant and social application needs.

Introducing enterprises into the school, taking the integration of industry and education as the main line of the school's curriculum system construction, and setting courses according to the knowledge and ability requirements of innovative talent cultivation and the trend of industry development are important prerequisites for the effective construction of mass entrepreneurship education. By producing research system is used to implement scientific research units, colleges and universities with double gen fusion links between the education object, and through industrial practice further defined the double and the core of education curriculum content, building a scientific and comprehensive curriculum goal, stage, content, methods, such as perfecting system, good to meet all the chain system at different stages in the personalized needs of students. Exploring innovation and entrepreneurship opportunities in different professional fields and moving towards differentiation is the proper pattern of entrepreneurship education in colleges and universities. Schools should provide entrepreneurship education and services, as well as incentive and support measures in a detailed and hierarchical manner, which is an important part of the systematization and institutionalization of innovation and entrepreneurship education in higher vocational colleges.

2) Build innovative R&D and business incubation platforms with universities as the main body

Must be based on local and regional economic development, refining the school-running features of local colleges and universities and subject characteristics, the use of colleges and universities are the advantage of the intelligence library, the joint area industry body, local enterprises, to form the whole industry chain new technology applications and integration innovation platform, further development of colleges and universities personnel training on this platform. The function of scientific research and social services, and innovative entrepreneurial ecosystem construction is based on the fusion of innovation platform and let the students to participate in market research, technology research and development, the results of incubation, the process of marketing, as well as the market dynamic and scientific research achievements into the course system of yao community activities, and even into the teachers' teaching and scientific research ability. To build a long-term mechanism for vocational colleges to provide service industry and enterprises to support innovation and entrepreneurship education.

For higher vocational colleges, first of all, based on the regional industrial development and positioning, the construction of highly docking industry development of the discipline professional group, relying on the discipline professional group, focus on the cultivation of school-enterprise integration innovation platform. Select a platform with high technical level, strong service ability,

and the ability to undertake major projects to build a demonstration innovation platform, docking industry leading enterprises in the region, solve the key common problems of enterprises in the industry, improve the application research ability of higher vocational colleges. Second, on the basis of superior subject groups and technological innovation ability, it is necessary to build industrial colleges or research institutes with cooperative enterprises to undertake technological research projects of enterprises and jointly train students with enterprises. It is also necessary to explore the establishment of a linking training mode for application-oriented innovative talents, so as to further improve the level and quality of innovative talents training in higher vocational colleges. Third, higher vocational colleges and enterprises in innovation, win-win cooperation, has brought together technical innovation resources, strengthened the cross disciplinary depth fusion, in each other mutual harmony between the two sides established a long-term cooperation mechanism and the new partnership, based on this relationship, between the two sides can use the resource advantage and development needs, starting from the practice and industry demand cooperation in establishing a training center, vocational skills training platform and entrepreneurship practice platform, etc.

3) The chain of mass entrepreneurship and innovation education should be opened through the collaboration of multiple actors

In the implementation process of mass entrepreneurship and innovation education, the government, enterprises, industrial organizations, colleges and universities and other multiple participants should form a stable and in-depth cooperative relationship, and form continuous resource integration and sharing based on the mass entrepreneurship and innovation education chain. Among the participants, the government mainly involves the relevant administrative departments of finance, education, industry and commerce and the Communist Youth League. The main body of the enterprise mainly involves various production and research enterprises; Industry organizations mainly include relevant industry associations, industrial research organizations, regulatory organizations, etc.; however, there are many participants in colleges and universities, such as the employment office, educational administration center, scientific research center and other functional departments of colleges and universities. Through the establishment of relevant systems and collaborative relationships, a good link can be formed between the participants of the mass entrepreneurship and innovation education.

The sustainable and healthy implementation of entrepreneurship and innovation education requires the government agencies, enterprises, universities and social organizations to give full play to the promotion role based on their own resource advantages and functions. The government agencies such as education department, industrial and commercial department and other institutions should design the path, formulate the relevant system and collaborative relationship in the development and implementation of entrepreneurship and in-



novation education, and lead the other subjects Social organizations, such as industry associations and business incubation centers, participate in the construction of education content and education scene based on their own functions, and provide practical guidance for entrepreneurship and innovation education. As two important fulcrums of entrepreneurship and innovation education, enterprises and colleges and universities need to work together to teach the needs and experience of enterprises Education guidance, combined with the practical application of education guidance of University's own theoretical professional teachers and enterprise units, forms an education system of theory and practice. In the specific promotion work, we can extend and verify the innovation and entrepreneurship education system by constructing the mass entrepreneurship and innovation education base, the association of entrepreneurship and innovation education, and the Innovation Club, combined with the innovation and entrepreneurship competition, entrepreneurship competition, and entrepreneurship service website. In addition, government agencies, enterprises, universities and other joint organizations can also cooperate with adult education, continuing education and other relevant subjects to effectively enrich the objects and participants of entrepreneurship and innovation education, enhance the enrichment and sharing of the main resources in the education system, and guide the formation and transformation of students' Entrepreneurship and innovation education achievements in various forms such as entrepreneurship and innovation education fund and entrepreneurship incubation platform, We should gradually build a pattern of mass entrepreneurship and innovation education with the cooperation of subjects, the empowerment of resources and the integration of production and learning.

4) School enterprise joint construction of innovation skills and entrepreneurship practice competition system [5]

In the entrepreneurship and innovation education, we should make use of the collaborative relationship between the main bodies of the school and the enterprise, take the resources of the integration innovation platform, practice base, incubation base and training center of the integration of production and education, and make the personnel with management and innovation development practical experience become the external instructors of the entrepreneurship and innovation education, and construct the scene and practical teaching activities combined with the practice base of entrepreneurship and innovation, so as to improve the entrepreneurship and innovation education Practical significance and achievement transformation. Based on the innovation and entrepreneurship resources of both schools and enterprises, the main body competition of mass entrepreneurship and innovation is held regularly, and the innovation achievements and entrepreneurship cases of entrepreneurship education are verified and promoted with the help of social capital and organizations. At the same time, student associations can also use industry and enterprise resources to invite experts and entrepreneurs to carry out lectures, lectures and other activities.

The third is to ferment innovative ideas and ideas in innovative and entrepreneurial communities, and to connect with the integration and innovation platform of production and education integration. The existing relevant innovation and entrepreneurship associations in Colleges and universities are the important gathering places of colleges and universities' innovation and innovation points. With the help of policies and college management, college students' innovation and practice ability can be fully developed. Through the activities, practice germination and fermentation of innovation and entrepreneurship associations, and by the integration and innovation platform of application-oriented universities, the "platform + Project + mentor + team" teachers and students are adopted Innovation mode, after business incubation and market test, can ultimately transform the creativity into commodities, realize the promotion of innovation and entrepreneurship by the integration of industry and education platform + innovation and entrepreneurship oriented community, and promote enterprise incubation by innovation and entrepreneurship [6].

As the core of entrepreneurship and innovation education, colleges and universities should combine their own resources advantages to clarify the training objectives of entrepreneurship and innovation talents [6]. Corresponding entrepreneurship and innovation education should be carried out for students of different grades or stages. For example, general education on innovation and entrepreneurship should be given priority to for lower grade students, so as to cultivate students' basic awareness of innovation and entrepreneurship and necessary professional knowledge. For senior students, professional practical knowledge such as practical skills, entrepreneurial risk control and financing should be emphasized. At the innovation level, enterprises or application needs should be oriented. We should carry out multi-dimensional and multi-level education on entrepreneurship and innovation system. In daily courses, students' enthusiasm for innovation and entrepreneurship should be strengthened by combining with relevant innovation achievements incentive or entrepreneurship support. In addition, on the basis of fully understanding the external market and industrial operation and development needs, colleges and universities should gradually strengthen and optimize the teaching staff of entrepreneurship and innovation education, build mutually beneficial teacher and education cooperation with external institutions, and give full play to the practical promotion role of entrepreneurship and innovation education. The main body of colleges and universities should actively integrate various resources, gather the talents training force of innovation and entrepreneurship, and gradually establish the innovation and innovation education center and Practice Education Center, so as to provide solid support and strong guarantee for innovation and entrepreneurship. Colleges and universities can build a broad innovation and entrepreneurship practice platform with the external multi-agent cooperation, school enterprise integration, industry research and Education Association's equal education strategy, and promote internal and external forces.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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