

# Research on Innovation and Entrepreneurship Education in Vocational Colleges

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**Abstract:** Innovation and entrepreneurship education is an inevitable choice for the education reform of vocational colleges. This article analyzes the necessity of constructing an innovation and entrepreneurship education system in vocational colleges and the problems in innovation and entrepreneurship education in Jiangsu vocational colleges. It proposes to build an innovation and entrepreneurship curriculum system that integrates expertise and innovation, improve the practice system of innovation and entrepreneurship education, and establish an evaluation system for innovation and entrepreneurship education with the characteristics of vocational colleges.

**Keywords:** Vocational colleges, Innovation and entrepreneurship, Education system.

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## 1. Introduction

In recent years, innovation and entrepreneurship education in vocational colleges has been continuously strengthened, playing an important role in achieving high-quality employment and entrepreneurship for graduates, and promoting vocational education to serve economic and social development. However, in the process of development, some vocational colleges lack a deep understanding of innovation and entrepreneurship, have unclear goals for innovation and entrepreneurship education, and have inadequate education systems for innovation and entrepreneurship, which seriously restrict the cultivation of innovative and entrepreneurial talents in schools. Therefore, conducting research on innovation and entrepreneurship education in vocational colleges is of great significance.

## 2. The Necessity of Constructing an Innovation and Entrepreneurship Education System

### 2.1. Innovation and entrepreneurship education is necessary to serve the transformation and upgrading of the economy

With the adjustment and upgrading of industrial structure, industry enterprises are transitioning from processing oriented production and manufacturing to independent innovation oriented. Industrial structure adjustment and economic transformation and upgrading require a large number of innovative and entrepreneurial high skilled talents, which provides good development opportunities for innovation and entrepreneurship education in Jiangsu vocational colleges. Vocational colleges should actively adapt to market requirements, actively seek change, and cultivate highly skilled talents with regional characteristics for innovation and entrepreneurship, so that more and more students are eager to innovate and entrepreneurship, willing to innovate and entrepreneurship, and form a good atmosphere of innovation and entrepreneurship, leading entrepreneurship with innovation, and driving employment

with entrepreneurship.

### 2.2. Innovation and entrepreneurship education is the need for self-development of college students

For vocational college students, in order to obtain more employment opportunities and improve the quality of employment, they must possess creative, entrepreneurial, and employment abilities, and strive to become high-quality technical and skilled talents. While mastering the theoretical knowledge of innovation and entrepreneurship, they should pay attention to the improvement of innovation and entrepreneurship skills and employment skills, Innovation and entrepreneurship education in vocational colleges is an important way for students to acquire knowledge and skills in innovation and entrepreneurship.

College students have a strong sense of social responsibility, hoping to realize their life value and contribute everything to the economic development of the country. Innovation and entrepreneurship are the stage for them to realize their self-worth, and are a good opportunity for them to fully utilize their intelligence. Entrepreneurship can not only solve the personal employment problems of vocational college students, but also drive a large number of students to find employment, thereby promoting social development and economic prosperity, Improve the quality of employment for college students and achieve stable social development. Therefore, carrying out innovation and entrepreneurship education is a need for college students' self-development.

## 3. Problems in Innovation and Entrepreneurship Education in Jiangsu Vocational Colleges

In recent years, innovation and entrepreneurship education in vocational colleges has been continuously strengthened, playing an important role in achieving high-quality entrepreneurship and employment for graduates, and promoting higher education to serve economic and social development. However, there are still many problems with innovation and entrepreneurship education in higher vocational colleges, mainly including: (1) some vocational colleges have outdated ideas, vague target positioning,

insufficient emphasis, disconnection from talent cultivation and professional education, lack of professional teaching staff, lack of awareness and ability of teachers to carry out innovation and entrepreneurship education, lack of practical links, inadequate guidance and assistance, lack of a systematic curriculum system and quality assurance system, The innovation and entrepreneurship education system is not sound, and the participation rate and success rate of innovation and entrepreneurship are relatively low. (2) Due to the increasingly obvious diversity of student sources in vocational colleges (complex student source structure and diversified enrollment models), and the fact that most students are at the end of the college entrance examination source, the subject foundation and basic qualities of students are generally weak and have significant differences, which poses certain difficulties in building a universal innovative ability training model. (3) With the increasing number of college graduates year by year, the employment situation for college students is becoming increasingly severe. In this situation, the state encourages, guides, and supports more college students to innovate and start businesses, while education in innovation and entrepreneurship in various vocational colleges is relatively weak. (4) Some vocational colleges have not included innovation and entrepreneurship education in their professional talent training programs. Schools only carry out innovation and entrepreneurship education through innovation and entrepreneurship competitions, lectures, and other forms, lacking a comprehensive innovation and entrepreneurship education system, resulting in a low proportion of students receiving innovation and entrepreneurship education. (5) Inadequate guidance and assistance for innovation and entrepreneurship education. Some vocational college students lack guidance from teachers with innovation and entrepreneurship experience in their innovation and entrepreneurship projects, as well as financial support from schools and the government, resulting in a relatively small number of entrepreneurial projects and a low success rate. (6) The evaluation system for innovation and entrepreneurship education is incomplete. One is that the evaluation indicators are not comprehensive, only evaluating the school's innovation and entrepreneurship education based on the area of the school's innovation and entrepreneurship site, the amount of funds invested, the number of innovation and entrepreneurship projects, and the award-winning students participating in innovation and entrepreneurship competitions. The second is that the group participating in the evaluation is not comprehensive, and generally only students and teachers participate in the evaluation, lacking third-party evaluation, resulting in relatively low credibility of the evaluation results. Therefore, vocational colleges must build a comprehensive innovation and entrepreneurship education system, incorporate innovation and entrepreneurship education into talent training programs, and improve the innovation and entrepreneurship awareness and ability of all students.

## **4. Construction of Innovation and Entrepreneurship Education System in Vocational Colleges**

### **4.1. Constructing a curriculum system that integrates majors with innovation and entrepreneurship education**

The innovation and entrepreneurship education curriculum

is the main carrier and support for cultivating students' innovation spirit and entrepreneurial awareness, and improving students' innovation and entrepreneurship ability. Vocational colleges achieve the goal of innovation and entrepreneurship education by constructing a reasonable innovation and entrepreneurship education curriculum system, so it is also the main way to implement innovation and entrepreneurship education.

Vocational colleges establish an innovation and entrepreneurship curriculum system of "general education courses with professional courses (or practical projects)", incorporating innovation and entrepreneurship education into talent cultivation plans, cultivating students' innovation and entrepreneurship awareness and abilities, and making innovation and entrepreneurship education run through the entire process of talent cultivation. Provide general compulsory courses such as "Fundamentals of College Student Entrepreneurship", "Innovative Thinking and Methods", and "Career Planning and Management for College Students" for all students, while offering general elective courses such as marketing, enterprise management, and finance and taxation for students interested in entrepreneurship throughout the school; Each major (or group of majors) offers one innovation and entrepreneurship compulsory course with its own characteristics. For example, the course "Innovation and Entrepreneurship Practice of Embedded Intelligent Vehicle Robots" is offered to all second year students in the electronic information major group, and the course "Creation and Operation of Design Studios" is offered to all second year students in digital media design and other majors, Provide courses such as "Design and Development of Android-based Human Machine Interaction Projects" for all second year students in the Information Technology Service Outsourcing professional group, to organically integrate innovation and entrepreneurship education with professional education. At the same time, incorporate the assessment of innovation ability into professional course assessments; Practical courses or projects include professional semester projects, graduation design, college students' entrepreneurship simulation training, entrepreneurship training, college students' innovation training projects, science and technology innovation competitions, "Internet plus" innovation and entrepreneurship competitions, college students' career planning competitions, college students' entrepreneurship practice drills, etc. The curriculum system integrating innovation and entrepreneurship education with professional education is shown in Table 1 below.

For all students, by offering innovation and entrepreneurship general courses and innovation and entrepreneurship courses with the characteristics of their respective majors, professional mentors guide each student to complete university student innovation training program projects, professional semester projects, graduation projects, etc., to cultivate students' innovation and entrepreneurship awareness, spirit, and abilities; For students interested in innovation, mentors lead them to rely on various practical innovation platforms such as innovation studios, internal and external training bases, engineering centers, etc., to give face-to-face lectures, hands-on teaching, and one-on-one teaching. They guide students to actively and boldly carry out innovative activities such as product design, production, and debugging, participate in municipal and above skill competitions and innovation competitions, apply for and

complete provincial and above university student innovation training projects Participate in the provincial graduation project evaluation, jointly apply for patents and publish papers with teachers, and effectively stimulate students' interest in professional knowledge and skills through innovative elective courses and the establishment of "special classes", thereby promoting the improvement of students' innovation and creativity awareness and ability, and forming a strong innovation atmosphere; For students interested in entrepreneurship, entrepreneurship mentors focus on their creative ideas, invention patents, and other innovative achievements. By selecting projects, transforming innovative achievements, following up on the entire process, and providing key guidance, they use the entrepreneurship training provided by the college's entrepreneurship practice incubation base, as well as the physical stores in the salon area, department (college) maker space, and college student entrepreneurship park entrepreneurship practice incubation base, to gradually promote the improvement of college students' entrepreneurial practical abilities.

Based on the characteristics of vocational college students and their needs for innovation and entrepreneurship, establish a mobile APP mobile innovation and entrepreneurship course resource sharing platform and an innovation and entrepreneurship service comprehensive platform. Through the innovation and entrepreneurship course resource sharing platform, launch online open courses such as MOOCs and video open courses, and establish an online open course learning certification and credit recognition system. Through the comprehensive platform of innovation and entrepreneurship services, we provide college students with services such as interpretation of innovation and entrepreneurship policies, promotion and display of innovation and entrepreneurship projects, consultation on innovation and entrepreneurship issues, experience exchange, entrepreneurial practical exercises, search for entrepreneurial partners, and display of entrepreneurial bases. Attract experts in innovation and entrepreneurship education, well-known entrepreneurs, and entrepreneurial investors to enter the innovation and entrepreneurship classroom, offer high-level innovation and entrepreneurship lectures, and incorporate high-level innovation and entrepreneurship activities into the curriculum.

Incorporate credit requirements for innovation and entrepreneurship into graduation requirements. Convert students' completion of innovation projects, participation in research projects, publication of papers, patent acquisition, independent entrepreneurship, and awards in innovation and entrepreneurship competitions into credits, and specify the credit requirements for innovation and entrepreneurship in the professional talent training plan. The college's management measures for transferring majors prioritize supporting students with innovative and entrepreneurial achievements to transfer to relevant majors for learning.

## **4.2. Improve the practical system of innovation and entrepreneurship education**

### **4.2.1. Establish a mechanism for students to participate in scientific research innovation training**

Promote the integration of teaching and scientific research, strengthen the cultivation of scientific research abilities of college students, incorporate student scientific research into professional talent training programs, and establish a credit

recognition system; Open practical venues such as school laboratories and training rooms; Establish an incentive mechanism for students to participate in scientific research, and attract college students to actively participate in teachers' research projects. Implement a mechanism for students to participate in practical innovation and entrepreneurship training programs, select and fund a batch of college student innovation and entrepreneurship training programs, participate in provincial and above college student innovation and entrepreneurship training competitions, and build a national, provincial, school, and department (college) level four college student innovation and entrepreneurship training system with school characteristics. Through scientific research training and college student innovation and entrepreneurship training programs, we aim to enhance students' professional qualities, cultivate their innovative spirit and entrepreneurial awareness, and achieve the goal of entrepreneurial practice through the transformation of scientific research achievements into entrepreneurial projects, thereby improving students' entrepreneurial abilities.

### **4.2.2. Build an Innovation and Entrepreneurship Activity Center for College Students**

(1) Regularly carry out innovation and entrepreneurship themed activities

Targeted activities such as "technology activities", "entrepreneurship salons", "entrepreneurship forums", and "entrepreneurship simulations" are carried out to achieve communication between schools, departments (colleges), and students of different grades through various forms of innovation and entrepreneurship activities and to undertake various levels of innovation and entrepreneurship activities, forming a strong cultural atmosphere of innovation and entrepreneurship.

Invite experts to give innovation lectures, introduce innovation knowledge, impart innovation experience, and let students understand how to innovate and what issues need to be paid attention to. Through innovation themed lectures, stimulate students' enthusiasm for innovation; Inviting investors and others to give entrepreneurship lectures, introducing entrepreneurial knowledge and teaching entrepreneurial experience. Through education on entrepreneurial knowledge and cases, students can understand the selection of entrepreneurial projects, entrepreneurial methods, entrepreneurial processes, entrepreneurial laws, and potential problems encountered during the entrepreneurial process. This will inspire students' entrepreneurial ideas and broaden their entrepreneurial perspectives.

(2) Carry out innovation and entrepreneurship competition activities

Conduct special competitions such as innovation design competitions and innovation and entrepreneurship competitions to showcase students' outstanding innovation and entrepreneurship achievements, select outstanding works to participate in competitions at or above the city level, and enable students to improve their innovation and entrepreneurship abilities through training. At the same time, accumulate entrepreneurial knowledge in various entrepreneurship competitions and obtain simulated entrepreneurial experiences. Improve the system of mutual recognition and credit exchange between competition projects and courses, and incorporate innovation and entrepreneurship competitions into the practical teaching curriculum system.

**Table 1.** Curriculum System Integrating Innovation and Entrepreneurship Education with Professional Education

<b>Course category</b>	<b>Curriculum</b>	<b>Course or project name</b>	<b>Teaching objects</b>
<b>General Education</b>	Compulsory	Fundamentals of Entrepreneurship for College Students	All first year students in the school
	Compulsory	Innovative thinking and methods	All first year students in the school
	Compulsory	Career Planning and Development for College Students	All second year students in the school
	Electives	Interpersonal communication skills	All second year students in the school
	Electives	Entrepreneurship Lecture Hall	All students in the school
	Electives	Entrepreneurship Forum	All students in the school
	Electives	Entrepreneurship Salon	All students in the school
	Electives	Financial management	All first and second year students in the school
	Electives	Marketing management	All first and second year students in the school
	Electives	Enterprise management	All first and second year students in the school
	Electives	Entrepreneurship Law and Business Taxation	All students in the school
<b>Professional courses (Integration of Innovation and Entrepreneurship Education and Professional Education)</b>	Compulsory	Innovation and Entrepreneurship Practice of "Embedded Intelligent Vehicle Robot"	All sophomore students in the electronic information major group
	Compulsory	The establishment and operation of a design studio	All sophomore students majoring in digital media design, computer art design, etc
	Compulsory	Design and development of human-machine interaction project based on Android	All sophomore students in the Information Technology Service Outsourcing Professional Group
	Compulsory	Cross border e-commerce operation	All sophomore students in e-commerce
	Electives	Online Store Operation Practice	E-commerce sophomore
	Compulsory	Financial product marketing	All sophomore students in financial information management
	Electives	Personal Financial Planning	Financial Information Management Second Year Student
	Compulsory	Agricultural product marketing	All sophomore students in marketing
	Compulsory	Innovation and Entrepreneurship Practice of Modern Electrical Control System Installation and Debugging	All sophomore students majoring in mechatronics technology, electrical automation technology, etc
	Compulsory	Programming and Application Innovation Practice of Stacking Robot	All sophomore students in industrial robot technology
<b>Practical courses or projects</b>	Compulsory	Innovation Training Program for College Students	All first and second year students in the school
	Compulsory	Professional Semester Project	All first and second year students in the school
	Compulsory	Graduation Design	All third grade students in the school
	Electives	College Student Entrepreneurship Simulation Training	Second and third grade students in the entire school
	Electives	Entrepreneurship Practice	Second and third grade students in the entire school
	Electives	College Student Challenge Cup Entrepreneurship Competition	All students in the school
	Electives	"Internet plus" Innovation and Entrepreneurship Competition	All students in the school
	Electives	College Student Career Planning Competition	All students in the school
	Electives	Club Activities	All students in the school
	Electives	College Student Emotional Intelligence Training Camp	All students in the school
	Electives	College Student Career Training Camp	All students in the school
<b>Practical stage</b>	Electives	College Student Entrepreneurship Practice	All students in the school
	Electives	Entering the Innovation Studio	All students in the school
	Electives	Entering the College's Entrepreneurship Practice Incubation Base	All students in the school
	Electives	Entering the College Student Entrepreneurship Park	All students in the school

#### 4.2.3. Building an Innovation Studio

Relying on the construction of innovative studios and using the "mentor system" as a starting point, we aim to improve the effectiveness of innovation and entrepreneurship education. Each student is equipped with a professional advisor upon entering the school, who will develop an innovation and entrepreneurship guidance plan for students, guide innovation and entrepreneurship training programs, student skill competitions, etc., guide students to actively and boldly carry out innovation and entrepreneurship activities, stimulate students' interest in professional knowledge and skills, and promote the improvement of students' innovation and entrepreneurship awareness and ability.

#### 4.2.4. Building a college student entrepreneurship park

Build a college student entrepreneurship park as a practical platform for entrepreneurship education. Select projects formed by college students' entrepreneurial activities and innovation studios, and enter the college's entrepreneurial practice incubation base for cultivation and incubation; For entrepreneurial projects that have successfully incubated and can form physical companies, the college student entrepreneurship park provides venues, equipment, water and electricity, property management, and other related services to the settled entrepreneurial team. The park provides one-on-one entrepreneurial mentor guidance throughout the entire process, and sets up mentor business consulting services. At the same time, the settled team can also prioritize accepting outsourcing orders provided by growth enterprises, accumulate experience through the process of accepting outsourcing orders, and gradually become independent. Through real entrepreneurial activities, the potential of entrepreneurial students can be further developed.

#### 4.3. Establishing the evaluation system of innovation and Entrepreneurship Education

For the evaluation of innovation and entrepreneurship education in higher vocational colleges, the proportion of students participating in innovation and entrepreneurship, the number of school innovation and entrepreneurship projects, students' participation in innovation and entrepreneurship competitions and other indicators can not objectively and comprehensively reflect the actual situation of innovation and entrepreneurship education in schools, and can not reflect the improvement of students' comprehensive quality and ability of innovation and entrepreneurship. In order to better reflect the implementation and effect of innovation and entrepreneurship education in higher vocational colleges,

Establish an innovation and entrepreneurship education evaluation system with the core indicators of innovation and entrepreneurship education security (including management institutions, management systems, and funding), innovation and entrepreneurship education construction (including hardware and software environment, teaching staff, curriculum system, and practice platform), and innovation and entrepreneurship education achievements (including innovation and Entrepreneurship achievements, enterprise recognition, and social support), and draw scientific conclusions through third-party evaluation, So as to promote the sustainable development of innovation and entrepreneurship education in higher vocational colleges. Evaluation indicators include education security (management institutions, management systems, and funding), education construction (hard environment, soft environment, teaching staff, curriculum system, and practice platform), and education achievements (innovation and entrepreneurship achievements, enterprise recognition, and social support).

### 5. Conclusion

The construction of innovation and entrepreneurship education system is a complex system engineering, which requires a lot of human, material and financial resources from higher vocational colleges. Jiangsu higher vocational colleges should give full play to the local advantages of Jiangsu and the school running characteristics of higher vocational colleges, take the innovation and entrepreneurship education reform as the breakthrough of education and teaching reform, put it in a prominent position, and really promote the overall improvement of talent training quality with the profound change of educational philosophy.

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