

# Research on the Ecological System of Innovation and Entrepreneurship Driven by Local Universities in South Sichuan

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**ABSTRACT.** *In the context of Mass entrepreneurship and innovation Chinese universities, especially local application-oriented undergraduate institutions, have launched a practical exploration of it. Communicate with students, school and society by creative thinking and applying knowledge to practice. In the practice and exploration of mass entrepreneurship and innovation education, local colleges and universities in four cities of south sichuan in southwest China communicate with students, schools, teachers and regional society by institution management, curriculum integration, project study, cultural atmosphere construction and soon. which led to a good linkage effect, but also faced with the corresponding problems. In order to solve these problems, it is feasible to intensify the popularization of science and form a wider group of participants, keep close inter-disciplinary contact and cooperate with the superior resources in the west of the college, and further build a multi-channel cooperation platform. Finally, it will build a benign ecological interaction system between the four local undergraduate colleges and the regional society in southern Sichuan.*

**KEYWORDS:** *significance of Innovation and entrepreneurship in college education, local universities in south Sichuan, ecological System*

## 1. Introduction

Mass entrepreneurship and innovation comes from premier li keqiang's speech at BBS summer davos in September 2014. Li proposed to launch a new wave of mass entrepreneurship and grassroots entrepreneurship in the 9.6 million square kilometers of land and form a new trend of mass innovation and innovation by everyone. Later, he explained this key word frequently in the first world Internet conference, the executive meeting of the state council and the 2015 government work report. College education is a prudent, intelligent exercise. As the primary logic of university existence and continuity, talent cultivation takes practice as the goal and contains the essence of direction, passage and practice. As an important link of

practical education in universities, mass entrepreneurship and innovation activities are of great practical significance for accelerating the transformation and development of local application-oriented universities, promoting the enhancement of college students' awareness and ability of mass entrepreneurship and innovation, and serving and supporting regional economic development. It is the only way for universities to fulfill the function of talent cultivation and enrich the wisdom of education. On the one hand, various social activities and occupations are introduced into university campuses, and professional education is endowed with fresh vitality through theoretical interpretation. High-quality undergraduate education that combines general education with professional education, combines practice with learning, and integrates innovation with teaching is implemented. On the other hand, the static theory will be transformed into dynamic practice to further enrich the experience and forms of various social activities and occupations, radiate and guide regional entrepreneurship and innovation culture to promote the development of local economy and society.

In recent years, the national strategy of mass entrepreneurship, mass innovation and innovation-driven development has become a new engine of China's economic transformation and development. The purpose of innovation is reform. Supply-side reform aims to encourage innovation through macro-control, market mechanism and optimization system, so that the market can play a decisive role in resource allocation. As an important link in the strategic conception of one stem many branches, five areas coordination of Sichuan province, southern Sichuan region not only has a solid foundation in such industries as liquor, machinery, chemical industry, medicine, modern agriculture, but also has innate advantages compared with other four areas in higher education. Sichuan University of Science & Engineering, Yibin university, Neijiang Normal University and Southwest Medical University, all the four local undergraduate universities have a history of more than 50 years, covering comprehensive, science and technology, normal education, medical science and other applied universities, with their own characteristics of practical rationality and culture, forming a regional ecological network of higher education with reasonable layout, prominent advantages and complementary specialties. Under the background of mass innovation era Through in-depth analysis of the practical exploration of four universities in south sichuan to drive the innovation and entrepreneurship ecosystem, we can find a reasonable path for application-oriented universities to realize the transformation and development of such concepts as intelligent drive, practical education and cultural guidance, as well as the benign interaction between universities and regional society.

## **2. The practical exploration of local undergraduate universities in southern Sichuan to drive the eco-system of entrepreneurship and innovation**

### ***2.1 Establish special institutions, coordinate with functional departments and secondary colleges to guide, manage and regulate the positive development of mass entrepreneurship and innovation activities***

Among the four universities in south Sichuan , SUSE and Southwest Medical University have set up department-level innovation and entrepreneurship education management institutions, namely, college students' innovation and entrepreneurship science and technology parks, implementing the strategic concept of one park and multiple districts, and integrating the functions of entrepreneurship and innovation courses, entrepreneurship and innovation training, industry incubation, technical services, monitoring and evaluation, achievement transformation and promotion. Yibin University, Neijiang Normal University takes the university student entrepreneurship and innovation center as an affiliated institution of the academic affairs office, responsible for the management of relevant affairs. The education and practice of entrepreneurship and innovation in the four universities are led by university leaders, led by university students' innovation and entrepreneurship science park or university students' innovation and entrepreneurship center, and closely coordinated by academic affairs office, youth league committee, student affairs office and other relevant functional departments to jointly promote the effective implementation of practical education activities of entrepreneurship and innovation with secondary colleges as the main body. Objectively, we have established an education and management system for entrepreneurship and innovation with clear rights and responsibilities, joint management, overall planning and coordination, and clear subjects. It provides organizational support and guarantee for the healthy development of the entrepreneurship and innovation education activities, and is of positive significance for guiding, managing and standardizing the entrepreneurship and innovation activities, promoting the research and development of entrepreneurship and innovation courses, the implementation of entrepreneurship and innovation training, deepening technical services, implementing monitoring and evaluation, and promoting the transformation of achievements.

### ***2.2 Optimize curriculum design, and implement the intelligent education path of cooperation between industry, education, research and innovation by relying on science and innovation projects and combining local characteristics***

Since Joseph Schwab put forward the theory of practical curriculum pattern, the establishment and design of curriculum pattern began to seek the consistent interpretation of meaning, that is, to understand the internal and external meaning through the interaction between the learning subject and the objective environment. With the traditional target course, the results compared with the behavior control, process, means and practice curriculum pattern more prominent internal motivation,

by doing one, using the brain and hand, pointing to the people understanding the meaning of the different things related, give practical purports to professional knowledge, improve individual professional knowledge in the sharpness of the realistic environment, propriety and wisdom. College professional courses in the new era should not only conform to the industrial structure and characteristics of social economy, but also realize the seamless connection between high-quality talents and various industries. It is more urgent to combine with the social background of mass innovation to guide the students to take root and germinate the consciousness and ability of mass innovation. The four schools in south Sichuan actively explore the construction of practical curriculum model, focusing on entrepreneurship and innovation courses, and compiling courses on the public basis of innovative and entrepreneurial thinking, guidance on entrepreneurship and employment, innovative elective programs and other courses centering on regional and professional characteristics. For example, the 1+3 entrepreneurship and innovation course designed by Yibin University and the quality-oriented education practice elective implemented by Sichuan light chemical technology university take double creation as the assessment index. The second class of entrepreneurship and innovation in Southwest Medical University is launched. Professionals such as incubators, high-tech enterprise management committees and entrepreneur representatives are invited to give lectures at the University. Relying on the trinity teaching space and time of college, research institute and practical training enterprise, it reflects that it takes professional theory as the foundation, innovation and innovation thinking as the core, and innovation and innovation practical ability as the breakthrough. After that, we will no longer stick to the traditional classroom organization form and teaching and receiving mode, cooperate with the network, practice base and enterprise project-based learning, and focus on driving the curriculum design of entrepreneurship and innovation education based on the concept of interest, self-initiative, discovery, exploration and application transformation.

Relying on the science and innovation program, the four schools of south Sichuan vigorously promote the entrepreneurship and innovation training for college students. The responsible departments of entrepreneurship and innovation of the four schools in south Sichuan are in charge of the project implementation, cooperating with the functional departments of the school youth league committee, academic affairs office, student affairs office, etc., with secondary teaching colleges and young college students as the main body, to publicize and cultivate the research projects of entrepreneurship and innovation. They have strictly implemented the project guidelines, selected double-qualified instructors, and checked the related affairs of project approval and project settlement, forming a large number of research teams with innovative thinking and practical ability. In the past five years, the four universities have won more than 2,100 times of provincial and national youth innovation and challenge cup projects, and many times of provincial or above achievement awards for outstanding research achievements in science and technology innovation projects. Among them, Southwest Medical University's disposable catheter scalp needle team won the excellent prize in the third China innovation and entrepreneurship competition in Sichuan and obtained the project

funding from provincial science and technology department. In terms of project distribution, all schools have formed the ecological-oriented project layout with prominent advantages in Zigong -- machinery, industry, energy, Yibin -- liquor, media, modern agriculture, Neijiang -- education, life service, Luzhou -- medicine, information and liquor, centering on their own professional layout and urban characteristics. The overall projects that reflect the characteristics of comprehensive and classification, quality and difference are featured with local materials according to local conditions, helping to promote the entrepreneurship and innovation spirit of students and the improvement of scientific and technological innovation ability. In the process of deep integration of industry, teaching, research and innovation, SUSE has vigorously built industrial colleges with local characteristics, such as colorful lantern college, Liquor College and Yanbang Gourmet College. Relying on the current situation, opportunities and challenges of the development of regional characteristic industries, implementing goal-oriented and collaborative education ; guiding and supporting the development, transformation and innovation of all walks of life in the society while cultivating the needed talents for the regional economic development. This is the key to improve the comprehensive strength and core competitiveness of local application-oriented universities, and it is also the inevitable trend of their future reform and development.

Taking practice as the starting point and destination is the educational philosophy foundation of the transformation of local application-oriented undergraduate universities in the new era, and also the fundamental path of our university cultural practice. The four application-oriented undergraduate universities in south Sichuan have implemented the education path of close combination of production, teaching, research and innovation by designing entrepreneurship and innovation courses full of practical interest and focusing on various scientific and technological innovation projects at all levels, so as to drive the entrepreneurship and innovation practices of the four universities in south Sichuan to cultivate capable people and produce fruits.

### ***2.3 Strengthen the construction of teachers engaged in entrepreneurship and innovation, and build a group of double-qualified guidance teams with a social perspective***

The four schools in south Sichuan actively learn from the experience of universities at home and abroad, base on the actual situation of running schools, deeply study the content, methods and ways of innovation and entrepreneurship education, promote the reform of innovation and entrepreneurship education and improve the effect of innovation and entrepreneurship education. Formed a team of teachers to guide innovation and entrepreneurship through cooperation and mutual promotion among counselors, professional teachers, experimental teachers and entrepreneurship and innovation management teachers. With solid professional knowledge, excellent practical skills and excellent social vision, I have insight into the forefront of the development of social industry, economy and culture and the boundary point of the growth of emerging fields, so as to guide students'

entrepreneurship and innovation education courses, research projects and practical activities more effectively. The four schools attach great importance to the construction of double-qualified teachers and place them at the forefront of innovation and innovation work in various disciplines. Relying on the professional qualifications and titles of double-qualified teachers and the experience of various industrial activities, they can provide benefits for the effective development of innovation and entrepreneurship practical education activities. The four schools encourage teachers to obtain relevant industry qualification certificates or vocational level certificates based on their majors, and further improve the training system for teachers of relevant majors and professional teachers of innovation and entrepreneurship education to work in industry enterprises. Organize regular teacher training, practical training and exchanges to improve the level of teachers' guidance on students' innovation and entrepreneurship practice. Conduct research meetings and teaching and research activities every month with this as the orientation, the four schools focus on building an elite team of entrepreneurship and innovation teachers with high knowledge and professional level, including counselors, full-time teachers, experimental teachers and related work management workers, to strongly support the entrepreneurship and innovation education drive system.

#### ***2.4 Create a high-quality campus culture of entrepreneurship and innovation and enrich the connotation of campus culture education***

University culture is the core of education, which is related to teaching and research, academic and freedom, rationality and experience, group and personality, creation and sharing, interaction and introspection. The university of our time, to create a quality culture of the university, to carry out the function of educating people, carrying out the path and leading the society, cannot be completed unless it carries forward the spirit culture, integrates diverse cultures, builds the campus culture, standardizing the system culture and highlighting the characteristic culture. Our university is no longer an ivory tower, but a place on the fringe of the society. To put it further, the core mission and primary logic of the existence and development of socialist university is to fulfill the social responsibility and shoulder the national mission. Therefore, building a high-quality university culture is not limited to the campus and is not guided by pure knowledge theory. Rather, it should advocate the close connection between the school, students and the society and build a bridge of the organic linkage among the three. As Gasset said, real knowledge should be returned to the society and real education should be tested by the social needs. The background of mass innovation times brings the best opportunity to enrich the connotation and path of university culture education. Strive to build the campus culture, innovative undertaking further explore the demands of school education and social needs joint effort, more benefit from the double gen education toward the society emerging industries or update the change of industrial structure of the natural qualities of boundary point, the natural power corresponds to the educational function and social change development, accelerate the students' quality structure and the society of professional communication, eventually combine school education and social economic development. In the process of creating the cultural

spirit of entrepreneurship and innovation education, it is necessary to adhere to the learning philosophy, highlight the advantages according to local conditions, and present the characteristics according to the school's measures. Under the general characteristics of innovation and innovation spirit, integration of knowledge and practice, mastery of knowledge and excellence, various universities display their unique innovation and innovation spirit and culture in combination with their own regional characteristics, running schools, goals and regional social and industrial advantages, and take the path of high-quality and intensive university culture education. The four schools in south Sichuan initially present their own characteristics of entrepreneurship and innovation campus culture, not only in terms of explicit rules and regulations, classroom teaching, educational goals or practical operation, or in the hidden double innovation wall logo, philosophy and attitude, cohesion or spiritual pursuit, but also in relying on regional advantages, the university to drive social development and other aspects have achieved good results, further expanding and deepening the connotation of their campus culture.

### **3. The bottleneck and reflection of innovation education practice exploration in the four schools of south Sichuan**

#### ***3.1 The mass popularization and publicity of mass entrepreneurship and innovation projects still needs to be enhanced to drive the wider participation of students in the mass entrepreneurship and innovation projects***

Entrepreneurship and innovation projects are an important part of the exploration process of entrepreneurship and innovation practical education. Students should apply the theoretical knowledge, professional skills, occupational insight, social acuity and innovative spirit they have learned to real life. The research project is an important form of support and carrier for the realization of the goal of entrepreneurship and innovation education to put learning into practice, to integrate learning and vocational education. In the research team's actual investigation of the four local undergraduate universities in south Sichuan, a certain number of students in all four universities are still confused about why, why, how and how to research innovation and entrepreneurship projects. Some students who are free from the core field of the learning process and at the edge of their academic efforts are even more indifferent to the mass entrepreneurship and innovation projects. Even if they participate as project team members, most of them do not participate in the process in name only, with the purpose of relying on the project leader and core team members to complete the project and receive honors by themselves. From this point of view, the school still needs to strengthen the popularization of mass entrepreneurship and innovation programs, exert both explicit and invisible influences, and face the historical background, importance and significance of mass entrepreneurship and innovation programs popularized by all young college students, as well as topics, objectives, methods and conclusions involved in the actual research process. As a small and embryonic society, colleges and universities not only respond appropriately to social changes and development, but also actively

connect with and participate in the whole process of social development. For mass entrepreneurship and innovation education, that the school needs to fit in with the social background of mass entrepreneurship and mass innovation, and drive the student group to meet the social citizens. expand the area, and enhance the impact of the implementation of the popular science publicity of the mass entrepreneurship and innovation projects in the field of the whole university, so as to drive the enthusiasm and active participation of the students in the mass entrepreneurship and innovation projects.4.2 There is a gap between theoretical teaching and entrepreneurship and innovation practice, and the communication between cross-disciplines is not sufficient, which will easily lead to one-sided entrepreneurship and innovation education.

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In terms of theoretical teaching and practical activities of entrepreneurship and innovation, there is no systematic standard system for innovation and entrepreneurship, so students can only rely on their own exploration and use the experience acquired from various sources for guidance. The support degree of the experimental environment is not enough. It is difficult to satisfy the experimental environment of college students because of the lack of laboratories and competent young scientific and technical personnel. The lack of training courses, the lack of a systematic and perfect training system, is theoretically inadequate, and the practice cannot adapt to the work of mass entrepreneurship and innovation to some extent. If the public service platform for college students' innovation and entrepreneurship can be set up effectively, it will greatly relieve the urgent need in reality. From the perspective of its system construction, target positioning and content determination, there are a lot of work that must be done to provide appropriate cooperation degree in teaching practice for improving and strengthening college students' innovation and entrepreneurship. In addition, the projects and school-enterprise cooperation supported by the entrepreneurship and innovation practice involve more than a single discipline. It is the intrinsic attribute and inevitable requirement of the specific practical activities of entrepreneurship and innovation to participate in and complete these activities through close coordination of interdisciplinary knowledge and skills, spanning disciplinary boundaries. The complexity, diversity, open problem solving and application orientation of mass entrepreneurship and innovation activities require the continuous integration of cross-disciplines to promote their internal development and qualitative leap, which also reflects the direction of modern science towards comprehensive development. Natural science and social science can also develop together to adapt to the trend of social development; the organic combination of technical science and social science has evolved into a new interdisciplinary subject.



Therefore, entrepreneurship and innovation education should encourage interdisciplinary communication and integration, maintain a high sensitivity to emerging knowledge content vaguely existing on the edge of interdisciplinary disciplines, and overcome the misunderstanding of the implementation of the college's single-hantedness and department's single-hantedness. The public platform for research, incubation and service of entrepreneurship and innovation should be built more closely and effectively in colleges and departments, colleges and colleges, and colleges and schools, so as to avoid one-sided goals of entrepreneurship and innovation education, and to truly achieve the original intention and connotation of education, exploration, application, innovation and creation.

***3.3 Further enhance the organic combination of entrepreneurship and innovation practice education and social industry career, strengthen school-enterprise and school-local cooperation, and build multi-channel entrepreneurship and innovation cooperation base and platform***

To strengthen the connection and combination of mass entrepreneurship and innovation education and social industry occupation is not only the only way for the development of local application-oriented colleges and universities, but also the inherent requirement for universities in our era to accelerate the transformation towards entrepreneurial and international development. Local colleges and universities and regional societies should build cooperation platforms for school-enterprise and school-land cooperation, enrich the linkage and joint promotion mechanism between each other, and stimulate the two-way transformation from concept conception to technological achievements incubation. give full play to the ecosystem of entrepreneurship and innovation in colleges and universities to drive the continuous progress and leap of social industries, and the engine of social industry will help the educational practice of entrepreneurship and innovation in colleges and universities to explore further and further, so as to seek the spiral virtuous cycle of entrepreneurship and innovation activities in colleges and universities and the development of social industries. Therefore, promote the teachers and the link of the enterprise, increase the intensity of school and society all communication from all walks of life, enhance the school actively respond to major hot issues of social reality, set up schools, enterprises, social improve channels of communication, in order to the enterprise culture of college students, social profession, infiltration and develop social hot issues that more effectively cultivate the entrepreneurship, innovation consciousness and ability of reforming society For example, in the project of Yibin university established in 2018, although it can make contributions and responsibilities to the development of social industry in multiple dimensions and levels, there is a certain lag: After the rural revitalization strategy was put forward in 2018, there was only one related project, which reflected the insufficient attention to social hot spots. In addition, although the four universities in south sichuan have made remarkable achievements in the practice and exploration of entrepreneurship and innovation education, the promotion of entrepreneurship and innovation technology and achievements and the incubation and transformation of entrepreneurship and innovation projects still need to further break through the

communication gap with various specialized industries and management service departments in the region. In addition to sharing and publicity activities within the school, excellent innovative and entrepreneurial achievement schools should actively contact with related enterprises in adjacent industries by virtue of relevant functional departments and college departments, so as to enrich the opportunities for win-win cooperation between students, schools and enterprises, and create channels for the interaction and transformation of real incubation results and potential application and promotion. Four universities also stated that the next step to intensify efforts to invite relevant enterprises on behalf of the school to double the education activities, organizing students to the enterprise research exchanges, through please come in and go out and a combination of increasing enterprise incubation results of actual conversion, thorough implementation and performance of the services in colleges and universities and drive smart industry development of the society, at the same time, it can provide students with more broad employment and entrepreneurial opportunities.

#### **4. Summary**

In the process of practical exploration of entrepreneurship and innovation education, the four undergraduate colleges and universities in south Sichuan have cooperated with specific colleges and departments by optimizing curriculum design, relying on science and innovation projects, integrating social needs, and implementing the intelligent education project of collaboration between industry, education, research and innovation. In leading the regional dual culture, make double gen and teachers team, service local industrial economy, strong support of school and society organic linkage, colleges and universities will itself double gen intellectual resources and social culture psychology system of double direction demand closely fit, fully implement the socialist colleges and universities serving local social from all walks of life, play double gen culture lead the task given by the new era. In the process of practical exploration to drive the regional entrepreneurship and innovation ecological construction system of the four universities, it is still necessary to further improve the fit between entrepreneurship and innovation courses and practical latitude, and enhance the popularization, management and extensive participation of entrepreneurship and innovation projects. Communication gap to achieve interdisciplinary and professional complementary advantages, give full consideration to the needs of local social industries and occupations, and deeply build a cooperation mechanism and linkage bridge for the interaction between university think tanks and local society, establish a benign ecological interaction system between the four local undergraduate colleges and the regional society in southern sichuan.

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