### Strategies for "Mass Enterpreneurship and Innovation" Education in Local Universities to Promote Rural Revitalization through Integrating Industry and Education

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Abstract At present, there are still some problems, such as insufficient integration between universities and local industry and education, urgent need to optimize the collaborative education system, limited quality of "mass enterpreneurship and innovation" education subjects, insufficient joint efforts of relevant policies, lack of rural revitalization subjects, and imperfect rural infrastructure and public service system. In view of the above difficulties and the practical efficiency analysis of "mass enterpreneurship and innovation" education in Hubei University of Science and Technology, this paper puts forward the strategies for "mass enterpreneurship and innovation" education in local universities to promote rural revitalization from the perspective of integration between industry and education; colleges and universities should deepen the reform of the education system of integration between industry and education, and cultivate "mass enterpreneurship and innovation" talents for rural revitalization; the government and society should strengthen the construction of rural service support system and optimize the "mass enterpreneurship and innovation" environment for rural revitalization.

Key words Integration between industry and education, "Mass enterpreneurship and innovation" education, Rural revitalization

### 1 Introduction

General Secretary Xi Jinping emphasized: "Innovation is the soul of social progress, and entrepreneurship is an important way to promote economic and social development and improve people's livelihood." Deepening the integration between industry and education and organically linking the "mass enterpreneurship and innovation" education of local universities with rural revitalization are the core functions and values of local university education serving local development under the new situation<sup>[1]</sup>. From the perspective of integration between industry and education, guiding college students to invest in rural innovation and entrepreneurship is an important driving force to promote rural revitalization, and it is also an important way for local universities to realize running schools with characteristics and cultivate applied innovative and entrepreneurial talents based on regional conditions. Rural innovation and entrepreneurship also provide a new opportunity and a broad development platform for college students' employment and entrepreneurship. According to the new journey of "promoting rural revitalization in an all-round way" put forward in the Report of the 20th National Congress of the Communist Party of China, local colleges and universities should aim to take root in local areas and serve the countryside, and make use of the advantages of human resources, professional cultivation and scientific research to plan the integration of "mass enterpreneurship and innovation" education and rural revitalization, train talents according to the industrial needs, and build a school-village development community to provide talent support for comprehensively promoting rural revitalization. Taking Hubei University of Science and Technology as an example, this paper analyzes the present situation of "mass enterpreneurship and innovation" education serving rural revitalization.

# 2 Current situation of "mass enterpreneurship and innovation" education in Hubei University of Science and Technology to promote the rural revitalization

#### 2.1 Current situation

**2.1.1** Exploring a new model of "mass enterpreneurship and innovation" education to promote rural revitalization talent training. Hubei University of Science and Technology actively improves the "mass enterpreneurship and innovation" education and curriculum system and forms a three-stage curriculum system of "general knowledge-improvement-actual combat" [2]. It implements credit management reform and flexible academic system, and flexibly adjusts training programs. It encourages, cultivates and fosters highquality "mass enterpreneurship and innovation" projects by holding "mass enterpreneurship and innovation" educational activities such as innovation and entrepreneurship competitions, entrepreneurship salons, entrepreneurship lecture halls and summer training camps. It implements a "four-in-one" evaluation system for students' innovation and entrepreneurship, which is composed of whole process assessment, diversified evaluation standards, diversified assessment methods and dynamic assessment results<sup>[2]</sup>. Focusing on the school's talent training policy, the "mass enter-

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preneurship and innovation" education is integrated with the school's rural social practice activities, "Qingma Project" and other talent training projects to give birth to a series of projects such as "Revitalizing the Class" and "spark teaching" and "Spark Education Support". It provides special guidance for the mass entrepreneurship and innovation project to the majors that are closely related to the revitalization of the countryside.

**2.1.2** Paying attention to the construction of the integration system of industry and education to empower rural revitalization. Through school-enterprise cooperation, Hubei University of Science and Technology College Students' Entrepreneurship Incubation Base (Xianning Litchi Maker Space Incubator of Hubei University of Science and Technology) is jointly established, and various kinds of maker spaces and enterprises are widely linked. It works in close cooperation with Hubei Youth Innovation Park (Optics Valley) Demonstration Park, Xiangcheng Cultural and Creative Industries Space (National Creative Space), Hubei Xiangcheng Intelligent Electromechanical Research Institute, Chibi E-commerce Incubation National Creative Space, etc., and plays the role of bridge and link, to foster the mass entrepreneurship and innovation team of teachers and students inside and outside the school and build a community with a shared future for schools and enterprises. It carries out government-school cooperation with Shicheng Town and Lengshuiping Village to jointly build industry-university-research cooperation base and enable rural revitalization.

**2.1.3** Improving the "mass enterpreneurship and innovation" education security system and strengthening the construction of the "mass enterpreneurship and innovation" platform. The school has set up Innovation and Entrepreneurship College, Steering Committee for Innovation and Entrepreneurship Education, and Teaching and Research Department of Innovation and Entrepreneurship Education to ensure the efficiency of "mass enterpreneurship and innovation" work from the organizational structure. It strengthens the building of "double-qualified" teachers, and hire successful entrepreneurs and outstanding entrepreneurs as "innovation and entrepreneurship" instructors. It implements the "Double Hundred" Construction Plan for Innovation and Entrepreneurship Teachers, regularly organizes teachers to prepare lessons collectively and train internally, and sends teachers to study outside for 30 times. It introduces online platforms such as "College Students' Entrepreneurship Simulation Training System" and "Rain Class", strengthens the construction of "mass enterpreneurship and innovation" talent cultivation platform, formulates Measures for the Construction and Management of Innovation and Entrepreneurship Teachers in Hubei University of Science and Technology, and improves the evaluation and employment of professional and technical positions and performance appraisal standards<sup>[2]</sup>.

## 2.2 Practical efficiency analysis of "mass enterpreneurship and innovation" education in boosting rural revitalization

**2.2.1** Questionnaire survey and analysis. After discussing with the managers and teachers of "mass enterpreneurship and innova-

tion", by pre-investigation, it is determined to prepare question-naires around the awareness, organization and system, implementation and guarantee of "mass enterpreneurship and innovation", with a total of 20 items. A questionnaire survey was conducted among 429 students in this school, and 429 valid questionnaires were recovered, and the effective rate of recovery was 100%. Using SPSS 22 to analyze the questionnaire, the Cronbach's  $\alpha$  is 0.773, the validity KMO value is 0.760, and the questionnaire data is valid.

(i) Students' awareness and willingness on "mass enterpreneurship and innovation" education. 54.08% of the students have a general understanding of the "mass enterpreneurship and innovation" education in schools, 19.58% know better, 19.35% don't know much, only 3.73% know very well and 3.26% don't know very well. It shows that students' awareness of "mass enterpreneurship and innovation" education is acceptable, which reflects that schools pay more attention to "mass enterpreneurship and innovation" education to a certain extent. Students have a strong willingness to participate in the "mass enterpreneurship and innovation" courses and related activities, with 42.19% willing, 10.02% very willing, 43.12% barely willing and only 0.7% very unwilling. Students have a strong subjective initiative for "mass enterpreneurship and innovation" courses and activities. On the one hand, such courses focus on practical application, keep up with the forefront of the industry, make it easy for students to apply what they have learned, and are attractive to students; on the other hand, it also shows that the school's "mass enterpreneurship and innovation" curriculum reform has achieved remarkable results, close to reality in content, with rich and diverse forms, and appropriate supporting incentive measures  $^{\lfloor 3 \rfloor}$ .

(ii) Students' willingness to promote rural revitalization through "mass enterpreneurship and innovation" and their understanding of policies. 49.42% of students are willing to participate in entrepreneurial practice to promote rural revitalization, 10.49% are very willing, 31.70% are barely willing, 7.69% are unwilling and 0. 70% are very unwilling. It can be seen that guiding students to serve rural revitalization through the step-by-step "mass enterpreneurship and innovation" education in schools and integrating rural revitalization strategy into various practical activities and projects can improve students' enthusiasm for participating in rural construction. However, the students who participated in the survey are mainly students at school, and it is only survey on willingness. It is uncertain whether students can keep their enthusiasm in the countryside when faced with the complex entrepreneurial environment in rural areas. 44.52% of the students have a general understanding of the support policies for "mass enterpreneurship and innovation" under the rural revitalization strategy, with 26.57% knowing little, 21.21% knowing something, 4.43% knowing well and 3.26% knowing nothing. Schools should strengthen the research on "mass enterpreneurship and innovation" education, rural revitalization and other related policies, and further improve students' awareness and understanding of various policies.

(iii) Feedback from students on "mass enterpreneurship and innovation" education in schools. A survey on students' satisfaction with "mass enterpreneurship and innovation" education shows that 36.60% of students are averagely satisfied, 30.77% are satisfied, and 23.78% are dissatisfied. Generally, students are satisfied with "mass enterpreneurship and innovation" education in school. After further investigation, 30.30% of the students think that the school's "mass enterpreneurship and innovation" education lacks substantive content and knowledge system, 22.38% of the students think that the school lacks practical platform, and the school still focuses on the theoretical preaching and education in the "mass enterpreneurship and innovation" education activities, and the practicality still needs to be further strengthened. The teaching effect cannot stimulate students' entrepreneurial enthusiasm, 18.65% of the students do not understand the "mass enterpreneurship and innovation" education and 14. 45% of the students are not interested in it. There are also 14. 22% of the students lacking enthusiasm because of the heavy workload of professional courses. The "mass entrepreneurship and innovation" educational activities can be incorporated into the professional curriculum construction reform, and the effect of "imperceptible influence" education may be better than that of "high-profile"

education.

When answering where they most want schools to increase investment in "mass entrepreneurship and innovation" education, 45.45% of the students think that holding relevant activities and providing a simulation practice platform is an urgent need for schools to improve. 24.94% of the students want the school to carry out more "mass entrepreneurship and innovation" training, 14.92% want the school to offer more courses, and 14.69% want to get financial support. Most students are eager to show their knowledge and talent through practice and realize their self-worth. 2.2.2 Effectiveness of "mass enterpreneurship and innovation" projects related to rural revitalization. A total of 241 national and provincial innovation and entrepreneurship training programs for college students in Hubei University of Science and Technology were approved from 2019 to 2021, including 61 at the national level and the rest at the provincial level. They can be divided into 204 innovation training programs, 22 entrepreneurship training programs and 15 entrepreneurship practice programs. There are 47 items closely related to the discussion of serving rural revitalization, accounting for 19.50%, involving a wide range of comprehensive fields, which explains the advantages of the comprehensive discipline system of school (as shown in Table 1).

Table 1 Typical projects of "mass enterpreneurship and innovation" in disciplines of Hubei University of Science and Technology to boost rural revitalization

Discipline	Project name
Medicine	Development and Network Pharmacological Evaluation of Functional Drink "Guihua Chunlu" Based on "Homology of Medicine and Food" Study on the Quality of Life of Rural Women with "Two Cancers"
	Study on Behavioral Intention of Two Cancer Prevention of Rural Women Based on HBM Model
Economics	Study on the Construction Path of New Agricultural Management System under the Strategy of Rural Revitalization: A Case Study of Mufu Mountain Area
	Study on "Internet Plus" Innovation Mode of Ecological Economy Transformation and Upgrading in Underdeveloped Areas: Based on the Investigation of Wufeng Tujia Autonomous County
	Study on Tea Industry Boosting Rural Revitalization and Development under the Background of "Internet Plus": A Case Study of Tea Industry in Xianning City
Pedagogy	Research on Poverty Alleviation through Education in Poverty-Stricken Areas: A Case Study of Compulsory Education in Chongyang County, Hubei Province
	Documentary Film of Colleges and Universities Boosting Rural Revitalization and Supporting Education and Poverty Alleviation
Literature	Study on the Strategies of the Integration and Development of Cultural Poverty Alleviation and Rural Revitalization Strategy in Xianning City After the Epidemic
	Innovative Application of Regional Culture in Agricultural and Sideline Products Packaging
	A Study on English Translation and External Communication of Text Description of China Green Brick Tea Museum
History	Collection, Arrangement and Research of Xianning Long Song
	Enshi Tujia Traditional Marriage Etiquette and Its Social and Economic Function
	English Translation of Folk Songs in Southern Hubei
Agronomy	Development and Industrialization of Osmanthus Fragrans Seed Oil
	Effect of Irradiation on Supercritical Co2 Extraction of Essential Oil from Sweet-Scented Osmanthus
	Sweet-Scented Osmanthus Moisturizing Cream
Art	Study on the Activation and Inheritance of Folk Bamboo Weaving Art in Southern Hubei
	Integration and Development of Internet Plus Rural Tourism and Cultural and Creative Industries in Yangloudong Township
	Investigation on Architectural Characteristics and Regional Cultural Characteristics of Ancestral Halls in Southeast Hubei

### 3 Effective strategies

### 3.1 Colleges and universities

- **3.1.1** Building up the socialist core values, cultivating the concept of "mass enterpreneurship and innovation" and paying attention to agriculture and farmers. College students' innovation and entrepreneurship practice has injected a powerful impetus into rural revitalization. Party committees in colleges and universities should combine the national conditions, agricultural conditions and rural conditions, strengthen top-level design and organizational leadership, innovate the mode of party building and educating people<sup>[4]</sup>, and carry out a series of ideological and political education activities in the theme of knowing and loving agriculture in the aspects of school-running policy, educational concept and team construction. Ideological and political education, labor education, professional education, scientific research practice, social service and "mass enterpreneurship and innovation" education should be deeply integrated, and the concept of active employment should be cultivated in combination with various educational activities such as classroom preaching, knowledge popularization, summer social practice and scientific research practice.
- **3.1.2** Actively carrying out rural "mass enterpreneurship and innovation" education and optimizing the "mass enterpreneurship and innovation" talent training system. Focusing on the strategy of revitalizing rural areas with talents, combined with the current situation of rural development and the optimization of professional education, it is necessary to optimize the professional curriculum system and build a progressive "mass enterpreneurship and innovation" education system of entrepreneurship general education, professional entrepreneurship education and entrepreneurship practical training education. It is necessary to increase the proportion of practical training courses, add public basic courses of "agriculture, rural areas and farmers" construction training, and add the special practice of "major combined with villages" to professional practical courses. It is necessary to innovate professional teaching content, integrate innovation and entrepreneurship education with professional education and rural revitalization education, and introduce "mass enterpreneurship and innovation" quality development and adaptive agricultural skills training<sup>[5-7]</sup>. Students should be called on to contribute to the development of their hometown, and experts inside and outside the school should be invited regularly to carry out agriculture-related skills training closely related to their majors.

Schools should optimize the "mass enterpreneurship and innovation" education practice system, strengthen the construction of practical training platform, and promote the cooperation in "government, industry, university and research" [8-9]. It is necessary to cooperate with local governments and enterprises to build a "college students' rural innovation and entrepreneurship practice base" for college students to serve rural construction, and integrate the advantages of knowledge and technology of colleges and universi-

- ties, government policy and financial support and enterprise practical experience to create a "triplex security" mechanism for students.
- **3.1.3** Creating a "double-qualified" teacher team and improving the integration level of industry and education in "mass enterpreneurship and innovation" education. Colleges and universities should open up the thinking for selecting and hiring "mass enterpreneurship and innovation" teachers, focus on training a group of professional, specialized "mass enterpreneurship and innovation" teachers, and establish a team of full-time and part-time "mass enterpreneurship and innovation" education teachers. It is necessary to strengthen the "mass enterpreneurship and innovation" education of professional teachers, encourage teachers to carry out "project-driven" teaching, nurture teaching through scientific research, and build a teaching mode integrating teachers' scientific research and students' mass enterpreneurship and innovation. Diversified teaching qualifications training should be organized, and practical training such as pre-job training, assuming a temporary post in rural areas or enterprises, and enterprise exchange should be carried out. A group of experts in the field of rural revitalization, agricultural entrepreneurs, professional farmers and other outstanding talents with rich practical experience should be selected as teachers, and the school's "mass enterpreneurship and innovation" teacher resource pool should be expanded.
- **3.2** Government and society The local government should optimize the "mass enterpreneurship and innovation" environment for rural revitalization, and encourage and support college students to start businesses in the countryside through "mass enterpreneurship and innovation" [10].
- **3.2.1** Increasing the publicity of rural revitalization strategy and actively guiding college students to return home to start businesses. It is necessary to focus on the rural revitalization strategy, strengthen the cooperation between school and government, actively carry out the policy publicity in the university and practical activities, and integrate the publicity work of rural revitalization strategy into college education and university culture construction. It is necessary to strengthen the introduction of enterprises, promote the transformation and upgrading of traditional industries, speed up the agricultural supply-side structural reform and opening up to the outside world, create more jobs, and guide college students to return home to work and start businesses, which can not only solve the current employment difficulties of college students, but also introduce talents for rural revitalization.
- **3.2.2** Building a rural talent education and training system and improving the rural "mass enterpreneurship and innovation" service system. The local government should strengthen the integration of educational resources, establish a dynamic management database of rural practical talents<sup>[11]</sup>, optimize the talent introduction policy, build a "mass enterpreneurship and innovation" platform to attract talents, open a "green employment channel" for college students, build a platform for employment, and attract outstanding

graduates to serve at the grassroots level. It is necessary to improve the talent incentive system, build a special incentive mechanism for "mass enterpreneurship and innovation" talents from the aspects of welfare treatment, reward mechanism, income distribution, professional titles and ranks, increase incentives and monitor and evaluate the implementation of incentive measures<sup>[12-14]</sup>, strengthen the construction of rural talents' vocational skill level and professional title accreditation system<sup>[15]</sup>, and establish a rural talent recognition system.

**3.2.3** Strengthening the construction of rural "mass enterpreneurship and innovation" infrastructure and promoting the integrated and coordinated development of industry and education. It is necessary to strengthen the construction of rural industry, resources and tourism, promote the interconnection of urban and rural infrastructure [16], and pave the way for rural innovation and entrepreneurship. It is necessary to speed up the construction of agricultural standardization, build a modern standard production system. improve warehousing and logistics facilities, and build a series of operational mechanisms on scientific and technological research and development, production and processing, brand and marketing, and quality supervision, so as to ensure rural innovation and entrepreneurship. The government should take the lead in promoting the cooperation among government, industry, university, research and use, improve the rural innovation and entrepreneurship incubation system, and encourage social diversified resources to invest in the construction of rural digitalization, "mass enterpreneurship and innovation" incubation training platform, and "mass enterpreneurship and innovation" industrial park, so as to provide capital, platform and opportunities for college students' rural employment and entrepreneurship.

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