

Exploring Innovation and Entrepreneurship Education in Application-oriented Undergraduate Universities: a Case Study of University A

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Abstract:

The establishment of applied universities plays a crucial role in shaping a high-quality higher education system in China, necessitating enhanced emphasis on innovation and entrepreneurship education. Drawing on the case study of Shandong University A's practical initiatives to advance the development of applied undergraduate colleges, this paper explores viable strategies for reforming innovation and entrepreneurship education in the contemporary era to foster applied talents. It proposes recommendations such as enhancing the innovation and entrepreneurship ecosystem, prioritizing hands-on educational experiences, and fortifying the establishment of entrepreneurial hubs.

Keywords:

Applied University Construction, Innovation and Entrepreneurship Education, Hands-on Learning, Entrepreneurial Hubs

1. Introduction

In the past decade, China's application-oriented higher education has rapidly developed in the new era. The optimized policy environment has boosted development momentum and actively promoted the transformation of application-oriented undergraduate colleges and universities, crucial for establishing a high-quality higher education system. Innovation ability is essential to align with the national innovation-driven strategy and represents a core quality of innovative applied talents. [2] Using Shandong A University as an example, this paper explores a feasible approach for reforming innovation and entrepreneurship education to aid talent training and university transformation.

2. New Demands for Innovation and Entrepreneurship Education in Constructing Application-oriented Universities

2.1. Guiding principles and construction goals

Emphasizing cultivating application-oriented talents, establishing majors, forming teams of dual-qualified educators, prioritizing research and community engagement, while ensuring institutional mechanisms aim at deepening industry-academia integration for comprehensive training. [1]

2.2. Basic ideas

Local universities, including University A, are actively driving transformation initiatives in application-oriented development and innovation education. However, there are noticeable deficiencies: a lack of an effective innovation and entrepreneurship cultivation system; inadequate enthusiasm among students to engage in high-level competitions. These challenges arise as new tasks and elevated demands confront innovation & entrepreneurship education within the context of constructing application-oriented universities.

3. A Case Study on Innovation and Entrepreneurship Education at Application-oriented Universities: the Case of University A

The establishment of application-oriented undergraduate colleges represents a significant step towards advancing the university's development in connotation, characteristics, innovation, and integration. On February 17th, 2021, Shandong Province designated University A as one of the initial support units for constructing application-oriented undergraduate universities. Throughout this process, University A has strengthened its innovation and entrepreneurship education system with positive outcomes that can provide valuable experience as a benchmark.

3.1. Innovation and entrepreneurship education reform and practice

In practice, University A actively responds to the national innovation-driven development strategy and takes the lead in comprehensively upgrading and optimizing the student innovation and entrepreneurship management system at both the university and college levels. By improving the leadership system and clarifying responsibilities at all levels, we will ensure the orderly and efficient progress of innovation and entrepreneurship. Establish and improve the operation mechanism to promote efficient allocation and integration of resources; Scientific evaluation mechanism is introduced to objectively evaluate and give feedback to innovative and entrepreneurial projects. At the same time, strengthen the supervision and guarantee mechanism to ensure that various policies and measures are effective, and provide a solid institutional guarantee for students' innovation and entrepreneurship activities. At the level of student training, University A regards cultivating students' innovative consciousness, innovative thinking, innovative character and innovative ability as its core task. Through the integration of high-quality education resources, the school has carefully created a set of progressive training system composed of "innovation and entrepreneurship curriculum enlightenment, professional curriculum deepening, innovation and entrepreneurship practice refining". This system not only covers theoretical learning, but also emphasizes practical exercises, allowing students to accumulate experience in simulated entrepreneurship, project incubation, social

practice and other links to improve comprehensive quality. In terms of operation and security, A University has spared no effort. The school has invested a huge amount of money to set up the Innovation Education Center, the Entrepreneurship Practice Center and the science and Technology Competition Guidance Center, which provide students with a full range of services from idea incubation to project landing. In addition, the university also vigorously strengthens the construction of college students' innovation and entrepreneurship bases, mass innovation Spaces and entrepreneurship incubation bases, improves the incubation mechanism, and provides support for start-ups in various aspects such as capital, technology and market. This series of measures not only improved the students' innovation and entrepreneurship ability, but also significantly improved the level and level of the school to obtain national and provincial innovation and entrepreneurship training programs and national discipline competitions, science and innovation competitions at the provincial level and above awards, further demonstrating A University's leading position in the field of innovation and entrepreneurship education.

3.2. Implementation steps and results

In 2011, a university established a leading group to promote student entrepreneurship. Subsequently, in 2016, an on-campus business incubation base for college students was launched. This was followed by the establishment of an independent College of Innovation and Entrepreneurship in 2019. By integrating innovation and entrepreneurship into credit management, we developed a three-tier progressive education system covering "course instruction" and "incubation", including online/offline general courses, studios/training rooms as guidance carriers, and mass innovation spaces/entrepreneurship bases as incubation platforms. As a result, we attracted 55 successful incubation projects and implemented comprehensive education encompassing training, scientific support, team incubation; specialized programs led to the formation of over 20 innovation societies. Annually organizing more than 40 discipline competitions along with over 60 entrepreneurial training activities involving nearly 10,000 students. Additionally ,thousands participated in various national/provincial/municipal-level innovation & entrepreneurship competitions annually. In the year 2020 alone prizes totaling up to or above provincial level reached ¥2.925 million for college student's scientific & technological innovations through school-enterprise collaborations resulting in over eighty projects.

3.3. Summary of experience

The experience can be summarized as follows:

a. Institutional construction plays an important role in the construction of innovation and entrepreneurship education system, which is the first and indispensable part. The school is deeply aware of this, so it continues to focus on improving the level of security services for scientific and creative education personnel, and through meticulous work, constantly establish and improve the system and management mechanism related to innovation and entrepreneurship. This move aims to fundamentally solve the pain points that are widely concerned by students, such as the fair recognition of competition credits and the reasonable calculation of the workload of the instructor, to ensure that each student's efforts can be duly recognized and rewarded. [3] At the same time, the university also significantly increased the financial support for the winners of high-level discipline competitions, and supplemented by a wealth of commendation and incentive measures, in order to

stimulate students' innovation enthusiasm and entrepreneurial potential, forming a virtuous circle of "promoting learning through competition and promoting innovation through competition", and effectively promoting the comprehensive improvement of students' innovation and entrepreneurial practice ability.

b. It is particularly worth mentioning that the scientific and technological innovation works carefully selected by University A stood out in the 2022 "Challenge Cup" National College Students' extracurricular academic science and technology Works competition and won the national second prize. This achievement not only highlights the university's scientific research strength and innovation vitality, but also makes University A the only local undergraduate university in Shandong Province. It successfully appeared in the final of the science and technology innovation category, showing its unique school-running characteristics and excellent results. In the fierce competition preparation and continuous practice of scientific and technological innovation, A University actively built a guidance and guarantee platform for scientific and creative education personnel, and provided all-round protection from technical support to psychological counseling for the participating teams, laying a solid foundation for the achievement of excellent results.

c. In recent years, University A has achieved remarkable results in the field of scientific and technological innovation and practical education. The atmosphere of scientific and technological innovation on campus has become increasingly strong, and students' enthusiasm for participation has continued to rise, with the participation rate rising year by year. Various scientific and technological invention and production projects have sprung up, and patent achievements have emerged endlessly, demonstrating students' excellent creativity and practical ability. At the same time, University A has repeatedly achieved good results in high-level discipline competitions, and the number and quality of the winning teams have reached a new height, which has won widespread social praise for the school. This series of achievements not only inspired the spirit of exploration and innovation consciousness of college students, but also greatly improved their entrepreneurial practice skills and preliminary scientific research literacy, and laid a solid foundation for training future scientific and technological innovation talents.

4. The Construction Strategy of Innovation and Entrepreneurship Education System in Applied Colleges and Universities

Application-oriented colleges and universities, as the key position to cultivate the artisans and high-skilled talents needed by the comprehensive construction of the socialist modern country, have a significant and far-reaching mission. In order to achieve the lofty goal of all-round growth and talent of students, these colleges and universities need to carefully construct a set of inclusive innovation and entrepreneurship education guarantee system covering the whole chain, throughout the whole process and permeating the whole range of "everyone can become a talent and everyone can show their talent" from the beginning of the freshman to the time of graduation and employment. [4] This system aims to break the traditional boundaries and ensure that each student can obtain a personalized growth path and broad development space within this framework, so that the spark of innovation is ignited in every student's heart, so that the seeds of skills take root and sprout in every inch of campus soil, and ultimately cultivate craftsmen and elites in the new era with solid professional skills and innovative spirit.

4.1. Improving the innovation and entrepreneurship system and the supporting work system

We will enhance the leadership structure, operational mechanisms, and evaluation processes for student innovation and entrepreneurship at university and college levels. We will also clarify departmental responsibilities in innovation and entrepreneurship education, develop specific work plans, and improve mass innovation effectiveness. Additionally, we aim to establish a comprehensive system for course teaching, practical training, and multi-party collaborative progressive innovation and entrepreneurship education.

4.2. Focusing on practice to educate people

We will emphasize practical education by implementing moral cultivation as a fundamental task, establishing a functional mechanism for the “three-dimensional education” concept, and constructing a talent training system that prioritizes “simultaneous five-fold education.” This involves revising talent training programs, developing application-oriented curriculum systems, enhancing practical ability training in curriculum outlines, and reforming teaching methods to underscore skill development. [5] These measures deepen the concept of application-oriented talent training amidst ongoing reforms and collaborative efforts between educational institutions, local entities, and enterprises.

4.3. Strengthening innovation-related activities

Enhancing mass entrepreneurship and innovation involves establishing tailored centers for college students, dedicated spaces for mass innovation, and incubation bases for entrepreneurial ventures. Additionally, it requires organizing entrepreneurship competitions and activities for college students, improving the introduction and promotion of outstanding projects to enhance the success rate of business incubation. Substantial progress has been achieved in top-level planning related to “mass innovation”, personnel training, technology transfer, project incubation, as well as guidance on entrepreneurship and employment.

5. Conclusions

In conclusion, we will utilize new developmental concepts to guide and deepen comprehensive reform in the field of education. We will effectively carry out essential projects to facilitate the high-quality development of application-oriented colleges and universities by enhancing professional construction, innovating personnel training methods, reforming practical teaching approaches, promoting innovation and entrepreneurship education, ensuring the advancement of teaching teams, and innovating teaching management mechanisms. [6] This will establish a solid foundation for the all-round development of application-oriented talents and enhance momentum in building robust education, science, technology, and human resources.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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