

Inspiration from the Innovation and Entrepreneurship Education Course of Warwick University

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Abstract: Widely promoting innovation and entrepreneurship education in universities is a key measure to cultivate students' entrepreneurial spirit and enhance their practical abilities in innovation and entrepreneurship. It is also an important approach to provide talent support for China's implementation of the innovation-driven development strategy and the construction of an innovative country. In recent years, Chinese universities have made positive progress in innovation and entrepreneurship education, with the widespread offering of related courses. Drawing on the successful experience of innovation and entrepreneurship courses at the University of Warwick and addressing the issues in China's innovation and entrepreneurship courses, the following insights are provided: Firstly, Chinese universities should adhere to the correct orientation of cultivating innovative and entrepreneurial talents. Secondly, the universities should improve the course structure to meet the needs of students at different levels and in different majors. Thirdly, the universities should enrich the integrated course content to promote a two-way interaction between professional education and innovation and entrepreneurship education. Fourthly, the universities should actively explore teaching methods and activities. Fifthly, the universities should broaden the channels for introducing innovative and entrepreneurial talents, enhance the quality and capabilities of the teaching staff, and build a professional and highly skilled team of educators in innovation and entrepreneurship education.

1. Introduction

Education, combined with the school's own development needs, it has established a development concept that emphasizes both academic research and revenue-generating operations. Guided by this educational philosophy, the University of Warwick actively collaborates with industry and commerce, and has attempted to offer innovation and entrepreneurship education courses in the Business School and Warwick Small Business Center. From its founding in the 1960s to the mid-1990s, in just 30 years of development, the University of Warwick has indisputably become a model of entrepreneurial universities in Europe and even worldwide. ^[1]

Innovation and entrepreneurship education courses are the main platform for universities to carry out innovation and entrepreneurship education. They play a crucial role in cultivating students'

awareness of innovation and entrepreneurship, solidifying theoretical knowledge in innovation and entrepreneurship, and mastering and enhancing practical skills in innovation and entrepreneurship. Since Warwick University's Small Business Center and Engineering School collaborated to offer courses such as "Entrepreneurship and Small Business" and "Entrepreneurship for Engineers" in 1987, the curriculum system for innovation and entrepreneurship education has been continuously improved. This has nurtured a large number of innovative and entrepreneurial talents, driving the development of the Coventry region in various aspects such as economy, culture, and education. Currently, there is still much room for improvement in innovation and entrepreneurship education courses in Chinese universities, and the experience in constructing innovation and entrepreneurship education courses at Warwick University can provide valuable insights for the development of such courses in Chinese universities.

2. Problems of innovation and entrepreneurship education courses in Chinese colleges

2.1 Cognitive bias: The utility of curriculum objectives needs to be adjusted

The initial driving force behind the development of innovation and entrepreneurship education in our country's universities was external policy promotion rather than the universities' own development needs, with the aim of addressing the low employment rate of college students. The comprehensive integration of innovation and entrepreneurship education in universities with the promotion of students' employment and entrepreneurship has been emphasized. Due to discrepancies in the understanding of the content and purpose of innovation and entrepreneurship education courses, these courses tend to have a certain utilitarian nature. ^[2]

Some universities narrowly consider innovation and entrepreneurship education as exclusive to management and business schools, even copying innovation and entrepreneurship courses from foreign business schools. Most universities view promoting student entrepreneurship as a way to address graduate employment issues, supplementing innovation and entrepreneurship courses as career guidance courses. They broadly include student innovation practice courses, career guidance courses, and professional career courses in innovation and entrepreneurship education, failing to recognize the importance of innovation and entrepreneurship education courses. Some universities narrowly believe that innovation and entrepreneurship education courses aim to increase students' entrepreneurship rates, encouraging students to start businesses independently through various measures, overlooking the essence and original intention of innovation and entrepreneurship education courses.

In addition, cognitive biases towards innovation and entrepreneurship education programs have led to unclear course objectives. Although most universities have clearly defined common goals for innovation and entrepreneurship education courses, they have failed to articulate hierarchical objectives for these courses based on the unique characteristics of the school's curriculum, thus failing to reflect personalized features for different student groups.

2.2 Type solidification: the systematic structure of the curriculum needs to be improved

Research has found that although the vast majority of universities in China offer compulsory and elective courses in innovation and entrepreneurship education, the course offerings are somewhat arbitrary and have not yet formed a systematic course structure. On one hand, most universities in China have a limited variety and quantity of innovation and entrepreneurship education courses, with course offerings mainly divided into three modules: basic entrepreneurship education courses, professional courses, and practical courses. ^[3] Superficial innovation and entrepreneurship education courses not only fail to enhance student engagement and enthusiasm but also struggle to

achieve the intended course outcomes.

On the other hand, most universities in our country lack in-depth integration and connection in the establishment of innovation and entrepreneurship education courses. They fail to consider the personalized needs of undergraduate students at different levels and do not extend innovation and entrepreneurship education courses throughout the graduate stage. Local universities offer innovation and entrepreneurship education courses at certain levels during undergraduate education but do not separately establish them during graduate education. ^[4] The development and establishment of innovation and entrepreneurship education courses lack scientific logic and substantial connection, as they do not differentiate the difficulty levels of basic courses, intermediate courses, advanced courses, etc., based on the foundation of students at different levels. Additionally, there is no integration of innovation and entrepreneurship theory with practice or the fusion of professional education with innovation and entrepreneurship education.

2.3 Theory-led: The comprehensiveness of the course content needs to be enriched

The lack of clear objectives in innovation and entrepreneurship education courses has further led to Chinese universities emphasizing general introductory content when organizing and selecting such courses. There is less integration of disciplinary and professional content, neglecting cutting-edge scientific research outcomes and practical social issues.

In Chinese universities, the innovation and entrepreneurship education courses mainly focus on introductory content, leading to a separation between innovation and entrepreneurship knowledge and academic disciplines. The course content is limited to the teaching of basic principles and methods of innovation and entrepreneurship, without integrating with academic and professional content. Innovation and entrepreneurship education courses are treated as adjunct to basic courses, disconnected from professional courses, resulting in the ineffective integration of professional knowledge with innovation and entrepreneurship knowledge, failing to provide professional support for students' innovation and entrepreneurship education practices. Effectively integrating innovation and entrepreneurship education into professional education, combining knowledge and skills, to cultivate students as innovative talents who understand both professional knowledge and possess entrepreneurial capabilities, is a key focus of the reform of innovation and entrepreneurship education courses in Chinese universities. ^[5]

2.4 Lack of practice: the diversity of curriculum teaching needs to be strengthened

In China, many university courses on innovation and entrepreneurship are taught using traditional lecture-based methods, lacking practical teaching formats and diverse extracurricular activities.

Lecture-based teaching can help students quickly grasp the fundamental theoretical knowledge of innovation and entrepreneurship. However, it tends to neglect the cultivation of students' practical abilities in this field, thus falling short of the deeper objectives of innovation and entrepreneurship education courses. Innovation and entrepreneurship education emphasizes experiential learning and encourages interaction between teachers and students. ^[6] In Chinese universities, it is essential for innovation and entrepreneurship courses to be led by teachers while also focusing on student-centered approaches to enhance student engagement.

In addition to the neglect of practical teaching methods in classroom instruction, the extracurricular activities provided by entrepreneurship courses in Chinese universities also lack diversity. Only a few pilot universities have designed and organized various entrepreneurship activities as supplements to classroom teaching. Despite students learning theoretical knowledge on entrepreneurship in class, they lack practical platforms and opportunities.

2.5 Weak strength: the professionalism of course teachers needs to be improved

In Chinese universities, the main entities responsible for implementing innovation and entrepreneurship education are the employment guidance center, entrepreneurship college, academic affairs office, student affairs office, and other departments.^[7] The teachers of innovation and entrepreneurship education courses are also administrative staff from the aforementioned departments and other subject teachers who serve concurrently, resulting in a shortage of teaching resources.

On one hand, the professionalism of the teaching staff in innovation and entrepreneurship education is insufficient, lacking the professional qualities required to guide students in practical innovation and entrepreneurship. The shortage of high-level teaching staff in innovation and entrepreneurship education not only hinders the high-quality development of related courses but also impedes the long-term progress of innovation and entrepreneurship education in Chinese universities.

On the other hand, the current faculty structure in Chinese universities is unreasonable, and the "dual-qualified" faculty team has not yet been established. An empirical study on the competence of innovation and entrepreneurship teachers in 1231 universities nationwide revealed that over half of the innovation and entrepreneurship course instructors in the surveyed universities are concurrently held by counselors and non-entrepreneurship field teachers, with only 16% being professional teachers in the entrepreneurship field and 2.4% being external entrepreneurship teachers.^[8] Innovation and entrepreneurship education courses are in urgent need of professional teachers with a solid theoretical foundation and experienced industry mentors.

3. The inspiration of the innovation and entrepreneurship education course of the University of Warwick to our country

3.1 Innovation curriculum objectives, adhere to the correct orientation of training innovative and entrepreneurial talents

Innovation and entrepreneurship education is a new educational paradigm and concept that has emerged based on the needs of China's economic and social development. It integrates innovation and entrepreneurship, knowledge and skills, theory and practice organically, and should not be narrowly equated with entrepreneurship education or innovation quality education.^[9] The ultimate goal of innovation and entrepreneurship education curriculum is to cultivate innovative and entrepreneurial talents, enabling students to possess core competencies in innovation and entrepreneurship and adapt to complex and ever-changing social environments.

First and foremost, Chinese universities should attach great importance to innovation and entrepreneurship education, adhering to the correct orientation of cultivating talents in innovation and entrepreneurship. It is crucial to support the development of innovation and entrepreneurship education at the university level, create a favorable atmosphere for innovation and entrepreneurship, and enhance the quality of innovation and entrepreneurship education courses.

Secondly, the curriculum of innovation and entrepreneurship education in Chinese universities should further innovate its objectives by reconstructing them at various levels such as cognition, skills, emotions, and applications. The setting of curriculum objectives for innovation and entrepreneurship education in Chinese universities should fully consider this characteristic, focusing on cultivating talents in innovation and entrepreneurship. This involves helping students understand the rich connotation of innovation and entrepreneurship education, grasp a solid theoretical foundation in innovation and entrepreneurship, enhance their comprehensive abilities in identifying opportunities, designing business models, and managing teams, as well as fostering critical thinking,

raising awareness and spirit of innovation and entrepreneurship, and strengthening students' practical skills through a combination of theory and practice.

Finally, our country's universities should also develop personalized innovation and entrepreneurship education course objectives based on the school's characteristics and students' qualities. Warwick University is renowned for its outstanding research and teaching, innovative spirit, and close ties with the business community. Its innovation and entrepreneurship education course objectives also incorporate academic research, guiding students to actively transform research outcomes.

3.2 Improve the curriculum structure to meet the needs of students at different levels and different majors

Our country's universities should offer differentiated innovation and entrepreneurship education courses based on the characteristics and needs of students at different academic levels, grades, and majors. It is essential to optimize the structure of innovation and entrepreneurship education courses and strengthen the systematic development of these courses. Following the principles and logic of course structure, it is important to reasonably design different categories of innovation and entrepreneurship education courses, expanding the scope horizontally and deepening the difficulty vertically.

From a horizontal perspective, Chinese universities should expand the types of innovation and entrepreneurship education courses to form a diverse and integrated curriculum system. Firstly, the universities should develop and establish a variety of innovation and entrepreneurship education courses, such as general courses, minor courses, practical courses, and activity courses. Secondly, the universities should increase the number of innovation and entrepreneurship education courses, explore innovation and entrepreneurship elements in various disciplinary courses, and maximize their transformation and integration with innovation and entrepreneurship education courses. Finally, the universities should optimize and reorganize existing or related innovation and entrepreneurship education courses, balance the proportions of various courses, and ensure the sustainable development and high-quality implementation of each type of course.

In terms of vertical development, innovation and entrepreneurship education cannot be achieved overnight but rather through gradual progress. Chinese universities should focus on the continuity and sequence of the curriculum structure for innovation and entrepreneurship education, establishing a systematic curriculum that is progressively interconnected, organic, and scientifically reasonable, bridging the gap between undergraduate and graduate stages. For instance, the University of Warwick offers innovation and entrepreneurship education modules for undergraduates, graduate-level courses for postgraduates, and executive diploma programs for corporate executives. Similarly, Chinese universities should provide progressive and specialized courses for students at different levels and stages.

3.3 Enrich the course content and promote the deep integration of professional education and entrepreneurship education

Innovation and entrepreneurship education courses have the dual attributes of general education and professional education. When organizing and selecting course content, emphasis should be placed on integrating with professional knowledge, while also enhancing practicality and applicability by focusing on societal issues. Chinese universities should shift from a curriculum perspective that prioritizes theoretical knowledge, to one that emphasizes the integration of general knowledge and professional knowledge and skills in innovation and entrepreneurship education, while also paying attention to the alignment of course content with scientific research and industry

demands.

Our country's universities should combine their own characteristics, educational positioning, and strengths in top disciplines to identify the integration points of innovative entrepreneurial education and professional course content, and provide students with a solid professional foundation and entrepreneurial skills for their innovative entrepreneurial practices. The University of Warwick's Center for Cultural and Media Policy Studies, School of Engineering, School of Life Sciences, etc., combine their respective disciplinary strengths to incorporate professional knowledge into the content of innovative entrepreneurial education courses.

Innovation and entrepreneurship education curriculum should focus on cutting-edge research and societal hot topics, aiming to ignite students' interest in innovation and entrepreneurship, and take innovative entrepreneurial actions to address social issues, thereby promoting social development. On one hand, Chinese universities should encourage teachers to integrate research projects and outcomes into innovation and entrepreneurship education curriculum, enabling students to understand the forefront of research development and guiding them to transform research results through innovative methods and entrepreneurial activities. Since its establishment, the University of Warwick has adhered to the educational philosophy of "academic research and revenue management", not only closely aligning its innovation and entrepreneurship education curriculum with scientific research, but also efficiently transforming research results to achieve academic revenue. On the other hand, Chinese universities should uphold a problem-oriented approach in innovation and entrepreneurship education curriculum, using societal hot topics as entry points to enhance the practicality of the curriculum content. The ultimate goal of innovation and entrepreneurship education is to cultivate innovative and entrepreneurial talents for society, address existing social issues in China, and drive development in various aspects such as social economy, and culture. The University of Warwick's innovation and entrepreneurship education curriculum focuses on global hot topics, encouraging students to seek solutions in a team format.

3.4 Optimize course teaching and expand practical and inquiry-based teaching forms and activities

Our country's universities should increase the proportion of practical teaching methods and activities in classroom teaching, adopting a diversified approach to course instruction. Innovation and entrepreneurship education courses need to change the traditional lecture-based teaching mode, introducing innovative teaching methods and models. Firstly, in classroom teaching, a combination of project-based and case-based scenario teaching methods should be used to simulate real-life innovation and entrepreneurship scenarios, engaging students actively and making them have a more intuitive understanding of innovation and entrepreneurship activities. ^[10-11] Warwick University not only adopts lectures, seminars, collaborative learning, and online learning based on the characteristics of the course content and the size of the student body but also innovates teaching methods with a focus on student experience. Secondly, teaching methods should be closely related to students' previous learning, practical backgrounds, and disciplines, enabling students to enhance their innovation and entrepreneurship skills within their professional knowledge scope.

Innovative entrepreneurship education courses are highly practical and need to cultivate students' innovative and entrepreneurial skills through a variety of extracurricular teaching activities. Currently, entrepreneurship education activities in Chinese universities mainly rely on competition formats, such as the China College Students' Entrepreneurship Program Competition, the National College Students' Extracurricular Academic Science and Technology Works Competition, the China International "Internet Plus" College Students' Innovation and Entrepreneurship Competition, and fewer distinctive activities at each university. Universities should organize various extracurricular

activities for innovation and entrepreneurship based on their own characteristics and student needs, establish innovation and entrepreneurship practice platforms as beneficial supplements to classroom teaching. The establishment of multiple innovation and entrepreneurship education practice platforms is one of the reasons why the University of Warwick stands out among many entrepreneurial universities.

3.5 Broaden the source of teachers, and build a full-time, full-time and combined teaching staff

Innovative entrepreneurship education in high schools is not only the responsibility of the employment guidance department but also of all teachers. Strengthening the construction of the faculty team for innovative entrepreneurship education in Chinese universities should start from the following aspects: firstly, introducing high-level professional teachers in innovative entrepreneurship education, raising the admission threshold for full-time teachers, and forming a specialized faculty team; secondly, expanding the sources of faculty members by hiring entrepreneurs and investors with rich experience in various fields to establish a mentor pool for innovation and entrepreneurship, providing students with practical guidance in innovation and entrepreneurship.

Our country's universities should adhere to the principle of mainly full-time faculty with a combination of full-time and part-time faculty, to establish a team of full-time teachers for innovation and entrepreneurship education. Firstly, it is necessary to improve the policies for recruiting and incentivizing talent in innovation and entrepreneurship education, attracting a large number of full-time teachers with both professional expertise and qualities such as diverse leadership, innovative thinking, and participatory skills to develop and build a curriculum group for innovation and entrepreneurship, as well as tasks related to evaluating students' innovation and entrepreneurship education outcomes. Secondly, the universities should establish a system for full-time teachers in innovation and entrepreneurship to have placements and training in industry enterprises, continuously enhancing teachers' abilities in teaching innovation and entrepreneurship. Lastly, the universities should encourage teachers from other colleges and disciplines to participate in innovation and entrepreneurship teaching practices, integrating professional knowledge and innovation and entrepreneurship knowledge in curriculum teaching, cultivating students' ability to solve complex problems using a combination of "professional knowledge + innovation and entrepreneurship thinking". Warwick University has established a specialized team of teachers for innovation and entrepreneurship in the Business School, with teachers from the innovation and entrepreneurship departments as supplements, forming a strong faculty team.

4. Conclusion

Warwick University, as a representative of entrepreneurial universities, places high importance on the development of innovation and entrepreneurship education. Not only did it establish the concept of "balancing academic research with revenue generation" at the beginning of its establishment, but it also prioritizes innovation as one of the key strategic developments of the university. In China, the initiation of innovation and entrepreneurship education was relatively late. With the guidance and support of policies, most universities have introduced courses in this field. However, challenges remain in terms of utilitarian course objectives, incomplete course structures, lack of integration between specialized and creative content, limited teaching methods, and a shortage of qualified teaching staff.

The successful experience of Warwick University's innovation and entrepreneurship education courses provides a roadmap for Chinese universities to address these issues. In terms of course

objectives, it is essential to focus on cultivating innovative and entrepreneurial talents, reconstructing course objectives at multiple levels including cognition, skills, emotions, and applications. Regarding course structure, enhancing the structure from both horizontal and vertical dimensions to create a systematic and coherent framework is crucial. When developing course content, integrating general innovation and entrepreneurship education content with specialized disciplines is vital to achieve a balance between specialization and creativity. In terms of teaching methods, it is necessary to explore new forms of classroom teaching while providing extracurricular practice platforms and activities. Lastly, in building the teaching staff, improving talent recruitment and incentive policies to attract outstanding innovation and entrepreneurship talents from both within and outside the university is essential to establish a high-quality teaching team in this field.

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