Research on the Innovative Mechanism for Enhancing the Quality and Efficiency of College Students' Innovation and Entrepreneurship Education in the Context of New Quality Productivity

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Abstract: New quality productivity, based on significant technological advancements and fundamental industrial transformations, demands excellent innovative talents. Therefore, it is very important to raise the quality and effectiveness of innovation and entrepreneurship education at the university level. Hence, exploring approaches to increase the quality and efficiency of innovation and entrepreneurship education under the new quality productivity concept of new quality productivity should include perfecting management systems, deepening industry-education integration, enhancing faculty training, revising course arrangements, and improving incentive mechanisms. This also involves developing students´ innovative skills, adapting to the needs of the industry, and enhancing the regional innovation capability. The aim of this paper is to study the innovative strategies for improving the quality and efficiency of innovation and entrepreneurship education at the university level under the concept of new quality productivity, providing useful suggestions for the transformation and improvement of such education in universities, so as to facilitate the coordination between innovative talent training and the development of new quality productivity.

Keywords: New Quality Productivity; University Innovation and Entrepreneurship; Quality and Efficiency Improvement; Innovation Mechanism

0.Introduction

With the progress of over ten years of deepened reforms, the innovation and entrepreneurship education (referred to as "innovation education" hereafter) in China has effectively promoted the reform and development of higher education effectively, and improved the social adaptability of the cultivated talents. Nevertheless, the unclear concept of innovation education and its inconsistent and general objectives have become a main obstacle to the high-quality development of innovation education in the new era. Thus, it results in the lack of vitality and low effectiveness in some universities´ innovation education, which contrasts with the present efforts to enhance the quality and excellence of higher education and change its role from "job-seeking" to "personality cultivation", as well as the progressive development and high-quality improvement. Therefore, it is important to explore new mechanisms to improve the quality and efficiency of innovation education in universities in the new era of productivity.

1.The intrinsic relationship between new quality productivity and entrepreneurship education in universities

1.1 New quality productivity puts forward new requirements for the structure of talent quality

New quality productivity is driven by breakthroughs in technological revolution, innovative allocation of production factors, and deep industrial transformation and upgrading, with its foundation lying in the continuous supply of high-quality, innovative talents. Compared with traditional productivity, new quality productivity demands a significant upgrade in talent quality structure: it is no longer satisfied with single-discipline knowledge reserves and repetitive

operational skills, but urgently requires versatile talents with interdisciplinary integration capabilities, technological sensitivity, industrial insight, and value creation abilities. Such talents can quickly discover the opportunities in the developing technologies, actively use the resources during the industrial transformation, and convert the creativity into value when facing uncertainties. As the main channel for the cultivation of innovative talents, the innovation and entrepreneurship education in higher education should meet this demand change by thoroughly combining advanced technologies, real industrial situations and innovation and entrepreneurship activities, changing from knowledge transmission to ability improvement, thus supplying the appropriate talent support for the progress of new quality productivity.

1.2 Innovation and entrepreneurship education provides a source of innovation and talent support for new quality productivity

Higher education in innovation and entrepreneurship is not only an important link in the talent training but also an important source and driving force for the development of new quality productivity. By receiving systematic training on innovative ideas and entrepreneurial activities, this kind of education can develop the creativity and adventurous spirit of the students, which helps to produce new technologies, business systems and operating methods. In both academic courses and practical projects, students work together across different disciplines to solve real industrial problems, and their innovative results are put into the market via incubation and transformation, becoming an essential part of new quality productivity. At the same time, the talents produced by this kind of education, full of initiative and entrepreneurial abilities, continuously enter new and future industries, playing a key role in promoting technological updates and industrial progress. Due to its unique educational functions and practice-based approach, innovation and entrepreneurship education has an indispensable bridging function between the talent chain, the innovation chain and the industrial chain, continuously injecting new intellectual energy into the development of new quality productivity.

1.3 New quality productivity and innovation education form a bidirectional driving force for synergistic evolution

The connection between new quality productivity and university innovation and entrepreneurship education is not a simple support relationship, but a bidirectional driving and cooperative evolution pattern which is established by their interaction. On one side, the advancement of new quality productivity creates a need for a large number of high-quality and innovative talents, offering definite cultivation routes and abundant market opportunities for innovation and entrepreneurship education. Meanwhile, the technological means and industrial environments also enrich the innovation and entrepreneurship education, promoting modifications in the course contents, enhancements in practical bases, and changes in teaching methods. On the one hand, innovation and entrepreneurship education promotes new quality productivity by producing talents and achieving effects, speeding up the process of converting knowledge into technology and technology into industry. Thus, they reinforce each other through close combination in the talent chain, innovation chain and industrial chain, forming a positive feedback loop of interactions based on demand and support.

2. Strategies for Implementing the Innovation Mechanism of Enhancing Quality and Efficiency in University Innovation and Entrepreneurship Education in the Context of New Quality Productivity

2.1 Improve the universities' innovation and entrepreneurship education management system and optimize the top-level design

Universities should overcome the limitations of fragmented administration, combine innovation and entrepreneurship education into their comprehensive development plans, and organize the allocation of resources, define the division of responsibilities, and simplify the whole training process by means of top-level design. The organizational structure should maintain a balance

between uniformity and flexibility, offering fixed support such as credit recognition and flexible academic systems for innovation and entrepreneurship activities, while keeping an adjustable area for interdisciplinary cooperation and technology transfer, thus promoting a systematic, unified and cooperative management system.

Universities should establish an innovation and entrepreneurship education leadership committee under the supervision of school heads, integrating the joint work of various departments like academic administration, student affairs, research and employment to eliminate the existing division of management. Regarding the credit system, innovation and entrepreneurship courses should be included in the required credit schedule, and also innovation practice credits should be introduced, permitting students to substitute these credits with rewards such as contest wins, patent approvals and entrepreneurial projects. As for the academic plan, an adjustable academic structure must be adopted, offering students the chance to take an entrepreneurial leave while keeping their student status, extending the longest leave period to six years. With respect to teaching management, a new system of multi-departmental course selection and mutual recognition should be set up, stimulating students´ interest in pursuing innovation and entrepreneurship courses from different disciplines. For project support, a university-based innovation and entrepreneurship fund must be established, reducing the process of project applications and funding utilization, and giving project teams more authority in decision-making. In terms of examination and evaluation, the efficacy of innovative and entrepreneurial education should be taken into account in the annual performance evaluations of each department, with specific quantitative standards set in aspects like course establishment, project guidance and achievement conversion, thus forming a responsibility chain including ´coordination by university, implementation by departments, participation of teachers and benefits to students´.

2.2 Deepen the collaborative education mechanism of industry-education integration and align with the cutting-edge demands of the industry

New quality productivity is marked by fast technological changes and significant industrial transformations. If the innovation and entrepreneurship education in higher education stays separated and independent, it will definitely result in a mismatch between Talent supply and industrial demand. To enhance the integration of industry and education, the cooperation should progress from loose alliances to mutual benefits. By collaboratively setting up industrial colleges, organizing teaching groups and constructing practical bases, the advanced industrial requirements should be integrated into the whole process of talent training, thus establishing an organic link between the educational chain, talent chain, industrial chain and innovation chain.

Universities ought to cooperate with the advanced local industries and the newly developed fields, establishing industrial colleges together with the leading companies and setting up training programs for talent development. They should convert real company projects into teaching cases and practical assignments. During the course execution, company mentors should be invited to the class and project-based teaching should be carried out according to the ´problem-setting by the company, solving by the students and guidance by both teachers´, so that the students can directly face the technical problems and management situations in the forefront of industry. In the practical stage, off-campus innovation and entrepreneurship practice bases should be set up to enable the students to participate in deep internships in the research departments or incubators of the companies, involving the product improvement, market investigation and business model construction. For the transformation of research results, joint university-industry laboratories and demonstration bases should be constructed to assist in transferring the students´ innovations to the enterprises, while the enterprises offer technical verification and marketing channel support.

2.3 Strengthen the construction of the teaching staff for entrepreneurship and innovation, and enhance the ability to combine full-time and part-time guidance

Under the background of new quality productivity, innovation and entrepreneurship education

puts forward new requirements for teachers´ interdisciplinary integration: they need both solid academic foundation and rich industrial experience; they can teach theoretical methods and guide practical projects. Universities need to break through the single academic faculty structure, and create a team of innovative teachers who understand technology, are proficient in industry, and have good guidance through internal training and external introduction, as well as the combination of full-time and part-time teachers, in order to provide talent support for improving quality and efficiency.

Universities can implement special training programs for innovation and entrepreneurship teachers, select key teachers to work in enterprises for training, participate in technology research and development and project management, and accumulate practical experience in the industry. At the same time, special positions for industry mentors will be established, selecting technical experts, successful entrepreneurs, and investment managers from industry enterprises as part-time mentors to undertake tasks such as course teaching, project guidance, and competition evaluation. In terms of management mechanism, establish a two-way flow channel between schools and enterprises, allow teachers to retain their positions and start their own businesses, and encourage enterprise mentors to participate in professional title evaluation and teaching assessment as industry professors. In terms of team building, we will establish an interdisciplinary innovation and entrepreneurship teaching team, which will involve teachers from fields such as technology, management, law, and finance to collaborate and provide students with full-chain guidance from technology validation to commercial implementation.

2.4 Reinforce the interdisciplinary modular curriculum system and promote the integration of cutting-edge technologies into teaching

The innovation generated by new quality productivity often occurs in interdisciplinary areas and cutting-edge technological fields, and the traditional curriculum system divided by majors is difficult to support the cultivation of composite innovation capabilities. Universities need to reconstruct the innovation and entrepreneurship curriculum system based on interdisciplinary integration, modular combination, and cutting-edge technology embedding, so that students can form innovative thinking and entrepreneurial abilities at the intersection of knowledge and technology.

Universities should remove the departmental barriers, establish interdisciplinary teaching groups and develop course clusters which are based on the latest fields such as artificial intelligence, big data, biotechnology and new energy, including "technical modules+management modules+practical modules". The technical module deals with the advanced technology theories and their real-world applications, while the management module involves market investigation, business systems, patent protection, financial plans , etc. The practical module stresses the project-based teaching method and helps the students to go through the whole process from proposing an idea to product development and the writing of business plan. In the execution of the teaching plan, a flexible arrangement of "compulsory core courses+selective module courses+independent practice courses" is encouraged, so that the students can combine the course modules according to their own interests and academic background.

At the same time, the real technological needs of enterprises are introduced into the classroom, and students are organized to form interdisciplinary teams to tackle problems in the form of "unveiling and leading", so that course learning can directly connect with the forefront of the industry. Establish a dynamic update mechanism for courses, eliminate outdated content every year, timely embed new technologies, new formats, and new models, and ensure that course content is synchronized with the development of new quality productivity.

3.Closing remarks

On the basis of clarifying the connotation of innovation and entrepreneurship education in

universities, this article analyzes the bidirectional driving relationship between new quality productivity and innovation and entrepreneurship education, and proposes innovative mechanisms to improve quality and efficiency from five dimensions: management system, integration of industry and education, faculty construction, curriculum reconstruction, and incentive guarantee. The above mechanism is guided by top-level design, guided by industry demand, supported by a combination of full-time and part-time teachers, supported by interdisciplinary courses, and driven by diverse incentives, forming a system-integrated, collaborative and efficient operational framework. Analysis shows that this framework helps to solve the current challenges of fragmented management of entrepreneurship and innovation education, loose connection between industry and education, and curriculum lagging behind the industry. It promotes the transformation of entrepreneurship and innovation education from scattered activities to systematic education, and provides a practical path for universities to serve the development of new quality productivity.

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