

New Quality Productivity for Innovation in Undergraduate Vocational Education

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Abstract With the increase in the number of undergraduate vocational colleges and universities, China's education structure is undergoing profound changes. The establishment of an effective and smooth bridge for vocational education can help focus on the national development plan and major strategies. In this way, high level, applied and technical talents can be cultivated, and more national craftsmen can be forged. Vocational education at undergraduate level shoulders the important task of cultivating high-level technical and skilled talents adapted to the needs of new quality productivity. The article explores the connotation, characteristics and talent cultivation requirements of the new quality productivity, and analyses the problems of non-adaptation and mismatch with the current vocational undergraduate economic and management professional talent cultivation. The article also puts forward optimization strategies and implementation paths in terms of talent cultivation positioning, curriculum system construction, faculty construction and industry-teaching integration. This article provides powerful talent support for the development of new quality productivity.

Keywords new quality productivity, vocational undergraduate, innovation of education

I. INTRODUCTION

As of early June this year, the Ministry of Education (MOE) has approved 51 undergraduate level vocational schools, including Nanjing University of Industrial Technology and Shenzhen University of Vocational Technology. The Catalogue of Vocational Education Professions (2023), published by the Ministry of Education, contains 281 vocational undergraduate majors such as artificial intelligence engineering technology, equipment intelligent technology, Internet of Things engineering technology, and modern seed technology, which are divided into 19 major categories. These majors are all the advantageous majors of various vocational and technical universities. Compared with general undergraduate majors, they are more vocational and technical in nature. This can simultaneously meet the dual needs of students who have both undergraduate qualifications and technical skills. The diploma of it

vocational undergraduate programmes and general undergraduate programmes are of equal value, and have the same validity in terms of employment, graduate studies and public examination[1]. The scale of vocational undergraduate education is gradually expanding, providing more opportunities for high school students to choose. The enrolment of vocational undergraduate programmes nationwide in the past five years shows that vocational undergraduate education has gained a certain degree of attraction. For example, the minimum scores of six undergraduate majors of Shenzhen University of Vocational Technology 2023 for submission exceeded those of 11 established undergraduate colleges and universities in Guangdong.

II. THE CONNOTATION AND CHARACTERISTICS OF NEW QUALITY PRODUCTIVITY AND ITS NEW REQUIREMENTS FOR VOCATIONAL UNDERGRADUATE PERSONNEL TRAINING

A. Connotation and Characteristics of New Productivity

New quality productivity refers to the new type of productivity that can significantly improve the production efficiency and economic benefits with scientific and technological innovation as the core, and with intelligence, informatization, and networking as the vocational characteristics [2]. It is a contemporary advanced productive force that has been spawned by revolutionary breakthroughs in technology, innovative allocation of production factors, and in-depth transformation and upgrading of industries. At the same time, it takes the qualitative change of workers, labour materials, labour objects and their optimal combination as its basic connotation, and the improvement of total factor productivity as its core symbol [3]. Unlike traditional productivity, new quality productivity represents a leap in productivity. It involves new fields and high technological content, and relying on innovation is its key prerequisite [4]. The proposal of new quality productivity means to promote industrial innovation by scientific and technological innovation. At the same time, it embodies the construction of new competitive advantages by industrial upgrading and winning the initiative of development [5]. It is characterized by the following features: First, high technological content. The

new quality of productivity is highly dependent on development. Participating in enterprise decision-making, scientific and technological innovation to promote formulating marketing strategies and promoting industrial upgrading and economic development through technological innovation enable them to help enterprises continuous technological breakthroughs and adapt to changes in market demand and improve transformation of achievements. Secondly, the degree of production efficiency and economic benefits. In turn, they informationisation is high. The wide application of can promote the upgrading of the whole industry and the information technology is an important symbol of the development of the economy [9].

new quality productivity. It realizes the rapid transmission and efficient processing of information and improves production and management efficiency. Third, the level of intelligence is outstanding. Intelligent production is an important feature of the new quality of productivity intelligent equipment and systems are applied to achieve the automation and intelligence of the production process. Fourth, the network characteristics are obvious. The application of network technologies such as the Internet and the Internet of Things has made the new productive forces more capable of cross-border integration and global resource allocation [6].

B. New Requirements for Vocational Undergraduate Talent Cultivation in the Development of New Quality Productivity

Based on the connotation and characteristics of the technological innovation and industrial demand, and new quality productivity, it puts forward new requirements for vocational undergraduate talent cultivation. The first is to update the professional knowledge structure. Vocational undergraduates need to have broader knowledge, deeper professional basic skills and cross-border integration ability. This can adapt to the demand for multidisciplinary knowledge of new quality productivity. Secondly, we should pay attention to the cultivation of innovation ability. Innovation is the core of new quality productivity [7]. Vocational undergraduate talents must have innovation consciousness and innovation ability, and constantly promote technological innovation and product upgrading. Finally, it is to strengthen the practical ability [8]. The new quality of productivity pays more attention to practical application. Vocational undergraduate talents need to have strong practical ability and problem-solving ability. In particular, they should be able to judge, make decisions and deal with practical problems in the field, and be able to transform theoretical knowledge into practical productivity.

III. THE ROLE OF VOCATIONAL UNDERGRADUATE TALENTS IN ECONOMICS AND MANAGEMENT IN THE DEVELOPMENT OF NEW QUALITY PRODUCTIVITY

A. Promote Enterprises to Adapt to Industrial Upgrading and Economic Development

Professional undergraduates in economics and management play an important role in the development of new quality productivity. They play a positive role in promoting the development of new quality productivity by giving full play to their professional advantages and practical ability. They have rich management knowledge and market insight and innovation ability. They can play a key role in industrial upgrading and economic

B. Promote the Transformation of Enterprise Achievement and the Improvement of Management Efficiency

The development of new quality productivity cannot be separated from scientific and technological innovation and achievement transformation. Vocational undergraduates majoring in economics and management play an important role in scientific and technological innovation and achievement transformation. They not only have the awareness and ability of scientific and technological innovation, but also can transform scientific and technological achievements into actual productivity. Through participating in scientific research projects, skills competitions and entrepreneurial practice, they can promote the connection between scientific and technological innovation and industrial demand, and promote the transformation and application of scientific and technological achievements [10]. At the same time, they can also introduce international advanced management concepts and technical means to improve the internal management efficiency and innovation ability of the enterprise, so as to enhance the core competitiveness and internationalization of the enterprise.

IV. PROBLEMS AND CHALLENGES IN THE CULTIVATION OF VOCATIONAL UNDERGRADUATES IN ECONOMICS AND MANAGEMENT

A. Unclear Positioning of Talent Training Objectives

At present, there are many different opinions and understandings in the academic circles about the positioning of vocational undergraduate talent cultivation, but there are relatively few descriptions and researches of talent cultivation objectives at the level of specific majors. In addition, the positioning of vocational undergraduates has been blurred and converged. It is mainly reflected in two trends: the first one is to add directly to the talent cultivation objectives of higher vocational colleges and specialties with technical skills continuously upgraded and theoretical level of undergraduates insufficiently embodied. The second is the convergence with the general undergraduate training objectives, and the attributes of vocational education are weakened. Both trends fail to fully reflect the characteristics of vocational education and the new quality of productivity needs. The evaluation index of technical skills of economic and management professionals pays more attention to soft power [11]. The second trend is more likely to appear in the training objectives of professional undergraduate talents in economics and management. The result is that the cultivation of technical skills is weakened by the attributes of general undergraduate training [12].

conditions, professionalism, and students' employment as a measure of school-enterprise cooperation.

That is, eight degrees of school-enterprise cooperation.

B. Constructing a Scientific and Reasonable Curriculum System

Students cultivated by vocational undergraduate programmes are required to have technical skills higher than those of higher vocational specialties, and general abilities higher than those of general undergraduate programmes. Therefore, to build a curriculum system oriented to market demand, combining theory and practice, and giving equal importance to vocational qualities and professional skills is the foundation for realizing the goal of talent cultivation. Following the growth of high-level technical and skilled talents and the law of students' physical and mental development, dealing with the relationship between public basic courses and professional courses, theoretical teaching and practical teaching, academic certificates and various kinds of vocational training certificates, and designing teaching activities as a whole, we can cultivate students with the "four kinds of abilities", namely, the ability to learn, the ability to think, the ability of vocational ability and the ability of sustainable development. The teaching and learning activities are designed in a holistic manner to cultivate students with four abilities, namely, learning ability, thinking ability, vocational ability and sustainable development ability, so that the vocational undergraduates cultivated will be able to keep abreast of the times and have the ability of lifelong independent learning in the face of the ever-changing new technologies and new jobs. A curriculum teaching system consisting of public foundation courses, general education courses, major foundation courses and professional courses is actively constructed. The public foundation courses focus on the basic cultivation of humanities and logical thinking, while the general education courses emphasize the cultivation of students' comprehensive qualities and all-round development, and the major foundation courses cultivate students' basic knowledge and basic abilities to carry out their work in their professional fields, and the professional courses aim at cultivating the main knowledge that students should possess in their professional fields. The basic courses of major categories cultivate students' basic knowledge and basic abilities to work in their professional fields, while the professional courses focus on cultivating students' main knowledge in their professional fields and their abilities for sustainable development after graduation, reflecting the characteristics of the majors and the individual development needs of the students in parallel, so as to expand the space for students' independent choices.

C. Strengthening the Construction of 'Dual-Teacher' Teaching Personnel

Teachers are the cornerstone of the high-quality development of vocational undergraduate programmes. Improve the method of introducing high-level talents. Introduce a group of skilled masters and technicians with

rich practical experience in enterprises; secondly, for teachers whose work experience is mainly teaching, increase enterprise practice and participate in solving front-line problems in enterprises; finally, for teachers whose work experience is mainly in enterprises, highlight the enhancement of teaching ability. Through the teacher training programme, teachers can master the teaching method as soon as possible. Cultivate, improve and accumulate the establishment of provincial teaching studio, provincial skills master studio and university youth innovation team. Take this as an opportunity to establish school-level teams and studios to strengthen echelon construction. The university introduced the employment and management methods of high-level talents. The school actively selects and employs a group of professional leaders, backbone teachers and masters of skills to drive the development of professional high-level characteristics. Through school-enterprise cooperation and industry-teaching integration, we will create a two-way integration path for talents, and establish a dual-teacher teaching team with school-enterprise sharing, two-way sharing, and common training of talents.

D. Deepening School-Enterprise Cooperation in Industry-Teaching Integration

First of all, strengthen the cooperation and exchange with industrial enterprises. Share resources by jointly building industrial colleges, order classes, training bases and laboratories. Promote the depth development of industry-education integration and improve the pertinence and effectiveness of talent training. From leading the talent training process of enterprises to cultivate high-skilled talents that can be seamlessly connected; secondly, combining talent training with the laws of enterprise operation, reconstructing the practice course system. On campus practice is based on typical work tasks of professional positions, and off-campus practice is based on real work tasks. According to the law of industry, the projects that can be operated in school are introduced into school. Through dual tutors, whole process, all-round and all-real project training, the employment education function is perfected. Provide human resources support for enterprise operations. Finally, give full play to the advantages of teachers' scientific research transformation and nurturing to solve the actual problems of enterprise operation and management, and participate in the talent cultivation and enhancement projects of enterprise employees at all stages.

VI. CONCLUSION

Establishing effective and smooth vocational education bridges helps to focus efforts on implementing national development plans and major strategies. Through this approach, high-level, applied, and technical talents can be cultivated, forging more 'national craftsmen'. Undergraduate vocational education shoulders the important task of cultivating high-level technical and skilled talents who can adapt to the needs of new quality and productivity. This article explores the connotation, characteristics, and talent cultivation requirements of new

quality productivity, and analyzes the problems of unsuitability and mismatch with the current talent cultivation of undergraduate economics and management majors in vocational colleges. The article proposes optimization strategies and implementation paths from the aspects of talent cultivation positioning, curriculum system construction, faculty team construction, and industry education integration.

CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

AUTHOR CONTRIBUTIONS

Lingzhao Deng wrote the paper and conducted the research; Hang Chen combed the literature; Xi Pei and Kun Ni revised the manuscript. All authors had approved the final version.

FUNDING

This work was supported by Shenzhen Education Science Planning Leading Group Office under Grant dwzz22167 and Shenzhen Polytechnic University under Grant 6023310012S

ACKNOWLEDGMENT

Lingzhao Deng serves as first authorship; Hang Chen and Xi Pei serve as corresponding authorship in this study.

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