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Cultivating Innovation and Entrepreneurship Abilities in Vocational College Graduates Based on a "Three-Dimensional and Four-Dimensional" System—Taking Guangdong Vocational Institute of Public Administration as an Example

Zhongkun Wu[1]*, Zhixiong Zhang[2]

[1]Guangdong Vocational Institute of Public Administration, Guangzhou 510550, Guangdong, China
[2]Guangdong Industry Polytechnic University, Guangzhou 510300, Guangdong, China

**Author to whom correspondence should be addressed.*

Abstract: Addressing the core weaknesses in the innovation and entrepreneurship capabilities of vocational college graduates, such as market insight and risk tolerance, as well as issues with the existing training model, including courses that are disconnected from industry, a lack of systematic practical training, and superficial school-enterprise cooperation, this paper constructs a "three-dimensional, four-dimensional" training system. The "three-dimensional" foundational framework encompasses three pillars: curriculum, general education layer, professional integration layer, practical application layer, practice as in three stages: introductory, simulated, and practical, and support including dual mentors, policies, and platforms. The "four-dimensional" differentiated strategies include four implementation pathways: professional differentiation, stage differentiation, addressing capability shortcomings, and school-government-industry collaboration. This system is grounded in theories such as multiple intelligences theory and systems theory, forming a closed-loop process of "theoretical input—practical application—support mechanisms". Based on the practices of Guangdong Vocational Institute of Public Administration, the paper proposes a competency development pathway tailored by major and stage, which can effectively enhance the innovative and entrepreneurial core competencies of vocational college graduates. This provides a replicable systematic solution for vocational college innovative and entrepreneurial education, supporting vocational education reform and regional economic development.

Keywords: Three-dimensional and four-dimensional system; Vocational college graduates; Innovation and entrepreneurship capabilities; Training pathways; School-enterprise collaboration

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1. Introduction

The in-depth implementation of the national "Mass Entrepreneurship and Innovation" strategy has provided policy guidance for the cultivation of innovative and entrepreneurial talent in higher vocational education. The "National Vocational Education Reform Implementation Plan" explicitly states, "Deepening the integration of industry and education, and strengthening school-enterprise cooperation to cultivate high-quality technical and skilled talent", emphasizing the central role of innovative and entrepreneurial capabilities in the cultivation of higher vocational talent [1]. In reality, vocational college graduates exhibit distinct capability characteristics in the field of innovation and entrepreneurship, they have relatively strong foundations in team collaboration and innovative thinking, which is closely related to the vocational college's emphasis on practical teaching and team collaboration in its training model. However, they still have significant shortcomings in core capabilities such as market insight and risk tolerance, leading to low survival rates for entrepreneurial projects.

The current training model has numerous limitations, where the curriculum system is disconnected from industrial needs, with a high proportion of theoretical content, insufficient integration of emerging fields such as artificial intelligence and live-streaming e-commerce, and low integration with professional education; practical components are mostly short-term, scattered lectures or competitions, lacking sustained, systematic hands-on training, and the coverage rate of stable entrepreneurial incubation platforms is low. The proportion of faculty members with practical experience is low, and school-enterprise collaborations often remain at the superficial level of exchange, lacking mechanisms for deep involvement in entrepreneurial talent cultivation. Additionally, policy support faces obstacles in implementation, resulting in limited actual benefits for students. These issues make it difficult for vocational college innovation and entrepreneurship education to meet the needs of student development and societal progress, necessitating the urgent establishment of a scientific and effective training system.

2. The theoretical implications and construction logic of the "three-dimensional four-dimensional" system

2.1. Definition of core concepts

The "Three-Dimensional" Foundational System serves as the cornerstone of the entire training pathway, comprising the curriculum system, practical training system, and support system. The curriculum system spans three tiers: the foundational layer, the professional integration layer, and the practical application layer. The foundational layer focuses on cultivating basic cognitive skills through courses such as "Innovative Thinking and Entrepreneurship Fundamentals". The professional integration layer integrates entrepreneurship modules tailored to the characteristics of each major. The practical application layer centers on real-world project operations, offering courses such as "Business Plan Development" and "Entrepreneurial Project Management". The practical system is divided into three stages: the introductory stage, the simulation stage, and the practical stage, which are implemented in a sequential manner. The introductory stage uses case reviews and expert sharing to spark students' interest; the simulation stage uses competitions and sandbox simulations to train core skills; and the practical stage allows students to participate in real projects at incubation bases. The support system includes dual mentor guidance from schools and enterprises, policy support and resource coordination, and jointly built practical platforms between schools and enterprises, providing strong support for the entire training process [2].

The "four-dimensional" differentiated strategy is a set of targeted measures developed based on the "three-dimensional" foundation system, tailored to different situations. In terms of professional differences,

training content is designed according to the characteristics of engineering, business, and service-oriented majors. For example, the Computer Application Technology major focuses on digital service innovation, while the E-commerce major emphasizes live-streaming e-commerce practices. In terms of stage differences, the program follows the growth patterns of freshmen, sophomores, and juniors, respectively emphasizing interest stimulation, skill training, and project incubation. The capability shortfall strategy targets weak areas such as market insight and risk tolerance, designing specialized improvement plans; the school-government-enterprise collaboration emphasizes the synergistic role of enterprises, schools, and governments, with enterprises providing practical resources, schools adapting course content, and governments coordinating policy support [3].

2.2. Theoretical support

The theory of multiple intelligences posits that human abilities are multidimensional and cultivable, providing theoretical support for the "three-dimensional, four-dimensional" system's "dimension-specific assessment and targeted cultivation". This theory acknowledges the multidimensional malleability of innovation and entrepreneurship capabilities, enabling us to design corresponding cultivation modules and strategies for different capability dimensions, such as specialized training for those lacking market insight [4].

Systems theory emphasizes the interconnection and interaction among the elements of a system, advocating a holistic understanding of the developmental patterns of phenomena. In the "three-dimensional, four-dimensional" framework, elements such as curriculum, practice, and support mechanisms are not isolated but rather interdependent and organically integrated, collectively forming a comprehensive development system. Guided by systems theory, we can better coordinate the relationships among these elements to maximize the system's overall functionality [5].

Constructivism and experiential learning theory assert that learning is an active process by which learners construct knowledge through experiences and reflections in real-world scenarios, providing a basis for the "practice-oriented" training approach. This theory emphasizes the importance of practice in skill development, aligning with the "Three-Dimensional Four-Dimensional" system's emphasis on practical stages and the incorporation of real-world projects, thereby aiding students in developing and enhancing their innovation and entrepreneurship capabilities [6].

2.3. Construction logic

The construction of the "three-dimensional, four-dimensional" system targets addressing capability shortcomings, closely focusing on core issues such as insufficient market insight and weak risk tolerance. Through the design of targeted course modules, practical projects, and supporting measures, it effectively enhances students' weaker capabilities. Additionally, by leveraging "school-government-industry collaboration" as a connecting link, the system effectively integrates corporate project resources, government policy support, and the educational advantages of schools to form a closed-loop cultivation system of "theoretical input—practical conversion—support measures".

Under this logic, theoretical knowledge is imparted to students through the curriculum system, students transform theory into practical operational skills within the practical system, and the support system provides faculty, policy, and platform support throughout the process, ensuring the effective integration and smooth implementation of theoretical learning and practical operations. Through this construction logic, the "3D–4D" system precisely addresses students' capability shortcomings and societal demands, enhancing the effectiveness of innovation and entrepreneurship capability development for vocational college graduates.

3. Current status and issues in cultivating innovation and entrepreneurship abilities among vocational college graduates

3.1. Current status of abilities

From an overall perspective, vocational college graduates demonstrate relatively strong teamwork and innovative thinking abilities. This is attributed to the widespread use of teaching methods such as group collaboration and project-based learning in daily instruction at vocational colleges, which have cultivated students' team spirit and collaborative skills. These methods also encourage students to think actively and take risks, thereby stimulating their innovative thinking to a certain extent.

Market insight, risk tolerance, and creative problem-solving abilities remain significant weaknesses. Among these, market insight is most closely linked to the effectiveness of entrepreneurial practices. Many graduates are insensitive to changes in market demand, making it difficult for them to accurately identify business opportunities. This often leads to project failures due to inaccurate market positioning during the entrepreneurial process. When faced with risks, most graduates lack the courage and ability to respond effectively, often choosing to retreat. Additionally, they struggle to propose innovative solutions when encountering problems.

From the perspective of group differences, professional differences are quite evident. Majors closely related to information technology and the market economy such as computer application technology and e-commerce perform better in terms of innovative thinking and market sensitivity, which is attributed to their curriculum content being closely aligned with the market and emphasizing practical operations; engineering majors have a stronger foundation in creative problem-solving, which is attributed to the emphasis on cultivating hands-on skills and logical thinking in engineering education; service-oriented majors have a clear advantage in team collaboration, which is closely related to the occupational characteristics of service-oriented majors.

Graduation year differences are highly significant. Graduates with workplace or entrepreneurial experience outperform recent graduates in terms of risk tolerance and other aspects. The complex situations and multiple challenges encountered by graduates in actual work or entrepreneurial processes have prompted them to gradually develop a more mature risk perception framework and dynamic adaptation mechanisms, thereby demonstrating higher levels of risk tolerance and coping abilities.

Differences in entrepreneurial experience are also pronounced. Samples with successful entrepreneurial experience outperform non-practicing groups in all core competencies, with the most significant gaps observed in market insight and problem-solving abilities. This disparity stems from successful entrepreneurs' full participation in the entire process of demand validation, product iteration, and crisis management in real business environments, making them more sensitive to market signals and accumulating directly transferable coping experiences.

3.2. Prominent issues with the current training model

In terms of the curriculum system, the proportion of theoretical content is too high, with insufficient integration with emerging fields such as artificial intelligence and live-streaming e-commerce, and low integration with professional education. Many vocational colleges' innovation and entrepreneurship courses still focus primarily on theoretical instruction, lacking practical components, making it difficult for students to apply their knowledge to real-world scenarios. Additionally, course content is not updated promptly, failing to adequately cover the latest developments in emerging industries and sectors, and thus unable to meet market demands for talent. Furthermore, there is insufficient integration and coordination between innovation and entrepreneurship courses and professional courses, resulting in a lack of synergistic effects [7].

Practical components have numerous shortcomings, often consisting of short-term, scattered lectures or

competitions, lacking sustained, systematic hands-on training, and with low coverage of stable entrepreneurship incubation platforms. While these activities can to some extent stimulate students' interest in entrepreneurship, their short duration and lack of systematic structure make it difficult to genuinely enhance students' innovation and entrepreneurship capabilities. The inadequacy of entrepreneurship incubation platforms also deprives students of the venues and resource support needed to transform ideas into actual projects.

In terms of support mechanisms, university-industry collaboration often remains at a superficial level of exchange, lacking mechanisms for deep involvement in entrepreneurial talent cultivation. Corporate participation is low, failing to truly integrate into talent cultivation processes such as curriculum design and practical guidance. Policy support faces obstacles in implementation, resulting in limited actual benefits for students. Some support policies have complex application processes and stringent conditions, making it difficult for many students to access corresponding policy benefits, thereby dampening their entrepreneurial enthusiasm.

4. Building a training pathway based on the "three-dimensional four-dimensional" system

4.1. Implementation pathway for the "three-dimensional" basic system

4.1.1. The curriculum system adopts a three-tier progressive design

(1) General education level

For first-year students, courses on innovative thinking and entrepreneurship basics are offered. Through systematic theoretical explanations and case studies, students develop a basic understanding of the concepts, significance, and basic processes of innovation and entrepreneurship, thereby stimulating their awareness of innovation and entrepreneurship.

(2) Professional integration layer

Offered in the second year, this layer integrates entrepreneurship modules tailored to each major's characteristics. The Computer Application Technology major introduces the "Digital Service Innovation" course, transforming professional knowledge into entrepreneurial skills for the digital sector; the E-Commerce major offers "Live Streaming E-Commerce Practices," helping students understand the processes and profit models of live streaming sales; the Administrative Management major includes "Community Service Innovation," guiding students to identify entrepreneurial opportunities in community and public service settings. Through this integration approach, innovation and entrepreneurship education and professional courses mutually reinforce each other, with students' professional entrepreneurial competencies improving in tandem.

(3) Practical application layer

Targeted at third-year students, courses such as business plan writing and entrepreneurial project management are offered, with project-based teaching centered on real-world corporate needs. Students form groups to undertake corporate projects, taking full responsibility from market research, scheme design, to operational implementation, thereby mastering business plan writing, project management, and operational techniques through practice. The teaching team provides ongoing guidance, regular feedback, and timely solutions to challenges encountered by students, steadily enhancing their practical skills.

4.1.2. The practical system follows a three-stage progression

(1) Enlightenment stage

Focusing on first-year students, this stage ignites interest through case studies and industry expert

sharing sessions. Successful and failed cases from both domestic and international contexts are analyzed in depth, enabling students to distill insights through comparison. Additionally, entrepreneurs are invited to campus to share their experiences and engage in face-to-face discussions with students, sparking entrepreneurial enthusiasm.

(2) Simulation stage

Launched in the second year, this stage hones core skills through business plan competitions and entrepreneurship simulation exercises. The business plan competition requires students to develop comprehensive proposals based on market demand and their own strengths, followed by presentations and defenses, to train market analysis and strategic planning abilities; the entrepreneurship simulation involves virtual company operations, enabling students to make decisions in dynamic market environments, thereby strengthening risk awareness and decision-making capabilities.

(3) Practical stage

Targeted at third-year students, they either move into the on-campus entrepreneurship incubation base, take on real-world projects from companies, or form independent teams to start their own businesses. The school collaborates with companies to build incubation spaces, providing venues, equipment, and resource support. Students can either deeply engage in corporate project development or establish their own teams to operate entrepreneurial projects, honing their innovation and entrepreneurship capabilities in real-world markets and accumulating transferable practical experience.

4.1.3. Support system provides diverse and collaborative support

(1) In terms of faculty, a dual mentor system is implemented, with corporate mentors participating in project guidance and on-campus teachers regularly participating in corporate practices. Corporate mentors have rich practical experience and can provide students with practical entrepreneurial guidance and advice; on-campus teachers, through participating in corporate practices, gain insights into industry trends and corporate needs, update teaching content and methods, and improve teaching quality.

(2) In terms of policies, the university offers on-campus entrepreneurship subsidies and compiles policy guidelines to simplify the application process for government support policies. The university provides financial subsidies based on students' entrepreneurship projects to support their entrepreneurial practices; simultaneously, it compiles government-issued entrepreneurship support policies into user-friendly policy guidelines to help students understand policy content and application procedures, thereby improving policy utilization rates.

(3) Co-build school-enterprise training bases and provide entrepreneurship incubation spaces and resource matching channels. The school and enterprises jointly invest in the construction of training bases equipped with advanced facilities and equipment to provide students with venues for practical teaching and entrepreneurship incubation. Through the base, a resource matching platform is established to connect students' entrepreneurship projects with resources such as funding, technology, and markets, facilitating the successful implementation of projects.

4.2. Implementation pathways for the "four-dimensional" differentiated strategy

4.2.1. Tailor strategies based on professional differences, designing distinct training priorities for different types of majors

(1) Engineering majors such as Computer Application Technology or Artificial Intelligence Technology

Application emphasize the cultivation of technology transfer capabilities, conducting patent incubation and school-enterprise joint technology R&D, enabling students to participate in the entire process from technology development to product commercialization, thereby fostering their technological innovation and Ability to convert achievements into practical results.

(2) Business majors such as e-commerce and marketing focus on training market operation capabilities, leveraging university-level key projects from the China International College Students Innovation Competition to conduct practical projects. Cross-border live-streaming e-commerce talent cultivation projects are implemented, where students simulate cross-border live-streaming e-commerce operations in laboratories, including product selection, live-streaming, and marketing, while collaborating with actual enterprises to conduct real cross-border live-streaming business, enhancing their market operation capabilities.

(3) Service-oriented majors such as Administrative Management or Social Work emphasize scenario-based innovation capabilities, with entrepreneurial projects in areas such as community innovation services and smart services. The program implements a community government service digitalization upgrade project, where students conduct field research in communities to understand the current state and needs of government services, and utilize digital technologies to design innovative service models and platforms, thereby improving the efficiency and quality of community government services.

4.2.2. Tailor training programs to different stages of education, developing tailored curricula based on the characteristics and needs of students in different grades

(1) During the first year, use innovation and entrepreneurship lectures to correct students' misconceptions and stimulate their entrepreneurial aspirations. Organize students to watch documentaries and films on entrepreneurship, invite alumni entrepreneurs back to campus to share their experiences, and conduct industry awareness lectures to help students understand the development prospects and entrepreneurial opportunities in various industries, fostering a correct entrepreneurial mindset.

(2) In the sophomore stage, specialized training in market research and risk management is offered to address students' weaknesses. Market research training combines theoretical instruction with practical exercises to help students master market research methods and techniques, enabling them to conduct independent market research. Risk management workshops use case studies and simulations to cultivate students' ability to identify and respond to risks, teaching them to develop risk contingency plans.

(3) In the third year, an innovation and entrepreneurship training camp is organized, providing students with one-on-one mentors to track and guide their entrepreneurial projects, and connecting them with investment resources and related support. Mentors provide personalized guidance based on the specific circumstances of students' entrepreneurial projects, helping them refine project plans and resolve practical issues. Additionally, the university's resource network is leveraged to connect students with angel investment, venture capital, and other funding resources, as well as venue and policy support, to facilitate the smooth development of their entrepreneurial projects.

4.2.3. Tailor strategies to address students' weaknesses and provide targeted improvement for areas of weakness in innovation and entrepreneurship

(1) For students lacking market insight, organize participation in real-world market research projects such

as analyzing consumer demand among student groups, enabling students to engage directly with the market through methods such as surveys and interviews to collect data, analyze, and research, thereby enhancing their ability to identify market needs.

(2) For students with weak risk tolerance, introduce entrepreneurship risk simulation training, where students make decisions and respond to different risk scenarios in a virtual environment, thereby improving their crisis response and decision-making abilities.

(3) For students with poor creative problem-solving abilities, organize interdisciplinary collaboration projects where students from different majors' form teams to tackle and solve real-world problems together. Through collaboration, students can learn from each other, complement each other's strengths, and cultivate a multidisciplinary problem-solving mindset.

4.2.4. Coordinate efforts between schools, government, and enterprises to integrate resources and form a collaborative educational force

(1) Enterprises provide real project orders, dispatch mentors, and open up practical resources, providing students with real live streaming project orders, dispatching professional mentors to guide students in conducting live streaming operations, and opening up the company's practical bases and resources for students to engage in on-site learning and practice.

(2) Schools convert corporate needs into teaching content and organize student teams to undertake and complete projects. The Computer Science Department collaborates with agricultural enterprises to develop WeChat stores. Schools adjust course content based on corporate needs, enabling students to learn relevant technologies and knowledge in the classroom. They then organize student teams to develop WeChat stores for enterprises and manage their operations, closely integrating teaching with practice.

(3) The government provides policy incentives to companies deeply involved in the program, offering subsidies and services for student entrepreneurship projects. The government implements tax breaks and financial subsidies to encourage companies to actively participate in school-enterprise collaborations. Additionally, it establishes a special fund to subsidize student entrepreneurship projects and creates an entrepreneurship service platform to provide legal consultations, financial agency services, and other support, fostering a favorable environment for student entrepreneurship.

5. Discussion and outlook

5.1. Implementation challenges and countermeasures

In the implementation of the "three-dimensional, four-dimensional" system, several challenges have emerged.

5.1.1. Insufficient corporate engagement is a prominent issue

Many companies lack enthusiasm for participating in vocational college innovation and entrepreneurship education, perceiving it as requiring significant investment with limited returns. Their involvement often stems from a sense of social responsibility rather than a desire for long-term participation.

5.1.2. Limited resource allocation by institutions is another significant bottleneck

Innovation and entrepreneurship education requires substantial financial, spatial, and equipment resources, yet some vocational colleges struggle to meet these demands due to budget constraints, leading to limitations in

curriculum design and the development of practical training platforms.

5.1.3. Regional industrial disparities result in inadequate strategy adaptability

There are significant differences in industrial structure and development levels across regions. The implementation of the "three-dimensional four-dimensional" system in different regions requires adjustments and optimizations based on local industrial characteristics; otherwise, it may fail to align with local conditions. To address these challenges, corresponding measures must be taken. Establish a diversified funding mechanism to ensure resource supply. Secure funding through multiple channels such as government grants, corporate sponsorships, and school self-funding to provide adequate resource support for innovation and entrepreneurship education. The government should increase investment in vocational college innovation and entrepreneurship education and establish a special fund; encourage enterprises to participate in education through donations and collaborative initiatives; and schools should allocate funds reasonably and optimize resource allocation.

Adjust strategy modules based on regional industrial characteristics to enhance adaptability. When implementing the "three-dimensional four-dimensional" system, thoroughly research the local industrial structure and development needs, and adjust course content, practical projects, and partner enterprises based on regional characteristics. For example, in regions where manufacturing is the primary industry, strengthen the cultivation of technical conversion capabilities in engineering disciplines; in regions with developed service industries, focus on cultivating scenario innovation capabilities in service-related disciplines.

5.2. Future research directions

Upgrading the system in the context of digital transformation is one of the important future research directions. With the rapid development of technologies such as artificial intelligence and big data, the modes and environment of innovation and entrepreneurship have undergone profound changes. Explore the integration of technologies such as artificial intelligence with the cultivation of innovation and entrepreneurship capabilities, apply AI to entrepreneurial project management, and provide decision-making support through data analysis; develop an entrepreneurial simulation platform based on virtual reality technology to provide students with a more realistic practical environment [8].

6. Conclusion

The "three-dimensional four-dimensional" system relies on the coordinated design of "courses-practice-support" and adopts a differentiated strategy of "major-stage-weakness-coordination" to effectively address the issues of "theory detached from practice" and "homogeneous cultivation" in higher vocational innovation and entrepreneurship education. The course system lays the foundation for theoretical knowledge and skills, the practice system provides progressive training from introductory to practical levels, and the support system aggregates resources from multiple sources to ensure the smooth progression of the process. Additionally, the system undergoes dynamic adjustments based on professional differences, training stages, and capability gaps to ensure the targeting and effectiveness of the training.

Practice at Guangdong Vocational Institute of Public Administration demonstrates that this system can effectively enhance graduates' innovation and entrepreneurship capabilities. After implementation, students' core indicators such as market insight and risk tolerance have significantly improved, the survival rate and quality of entrepreneurial projects have increased simultaneously, and graduates' employment competitiveness has also been enhanced.

Its core value lies in its foundation in professional specialization, its use of real-world practice as a platform, and its support from multi-stakeholder collaboration, providing a replicable model for vocational college innovation and entrepreneurship education reform. This model is not only applicable to Guangdong Vocational Institute of Public Administration but can also be adapted by other vocational colleges based on their own characteristics and regional needs, driving the sustained development of vocational college innovation and entrepreneurship education, cultivating more high-quality technical and skilled entrepreneurial talent for society, and serving vocational education reform and regional economic development.

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Disclosure statement

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References

[1] State Council, 2019, National Vocational Education Reform Implementation Plan. State Council Document 2019 No. 4.

[2] Li S, Liu Y, 2017, Research on the Pathways for Cultivating Innovation and Entrepreneurship Abilities Among Students in Higher Vocational Colleges. Vocational Education Forum, 2017(14): 27–30.

[3] Ou Y, 2020, A Study on the Construction of Strategies for Cultivating Innovation and Entrepreneurship Abilities among Vocational College Students. Education and Teaching Forum, 2020(9): 362–363.

[4] Gardner H, 1983, Frames of Mind: The Theory of Multiple Intelligences (3rd Ed.). Basic Books.

[5] Bertalanffy L, 1968, General System Theory: Foundations, Development, Applications. George Braziller.

[6] Piaget J, 1950, The Psychology of Intelligence. Routledge & Kegan Paul.

[7] Ministry of Education, 2015, Several Opinions on Deepening Vocational Education Teaching Reform and Comprehensively Improving the Quality of Talent Cultivation. Jiaozhicheng 2015 No. 6.

[8] Chattopadhyay S, Biswas S, 2022, AI In Entrepreneurship Education: Trends and Challenges. Springer.