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The Developmental Framework of Vocational Bachelor's Education: A Case Study of Shenzhen Polytechnic University (SPU)

Ken Wang*, Kan Yuan

School of Digital Media, Shenzhen Polytechnic University, Liuxian Road, Shenzhen 518055, China
*Correspondence Author, wk20230070@szpu.edu.cn

Abstract: ***Vocational bachelor's education, as a critical component of the higher-education system, carries the vital mission of cultivating high-quality, application-oriented talent. Taking Shenzhen Polytechnic University (SPU) as a case study, this paper systematically examines its innovative approaches to program design, industry–education integration, talent cultivation, regional economic service, and international collaboration. Building on the case analysis, we propose strategic recommendations for Guangdong Province—focusing on deepening school–enterprise collaboration, accentuating institutional distinctiveness, and strengthening top-level planning—to guide the development of vocational bachelor's education.***

Keywords: Vocational bachelor's education, Industry–education integration, Regional economic service, Talent cultivation**.**

1. Research Background and Significance

Against the backdrop of the Fourth Industrial Revolution and China's new "dual circulation" development pattern, technological iteration is accelerating, and continuous innovations in digital intelligence are simultaneously driving industrial optimization and upgrading. Consequently, the technological landscape has grown ever more complex and integrated. This shift has, in turn, altered traditional labor-demand patterns: emerging productive forces now impose fresh challenges and higher requirements for talent. In particular, the demand for high-level technical and skilled professionals—those who blend strong theoretical literacy with hands-on abilities—has surged, making them a key catalyst in transitioning industries toward mid-to-high-end segments. However, conventional higher-vocational and junior-college institutions have struggled to satisfy the growing need for these advanced roles.

To respond to this gap, China has issued a series of policy directives over the past decade to elevate vocational education to the bachelor level. In 2014, the State Council released the Decision on Accelerating the Development of Modern Vocational Education, which for the first time called for "exploring the development of vocational education at the bachelor level". Then, in 2019, the Implementation Plan for the Reform of National Vocational Education launched pilot programs in bachelor-level vocational education; that same year, the Ministry of Education approved the first cohort of pilot institutions, renaming them from "vocational colleges" to "vocational universities" and upgrading them to full undergraduate status with dedicated bachelor's programs. By 2021, the Opinions on Promoting High-Quality Development of Modern Vocational Education set a target: by 2025, enrollment in vocational bachelor's programs should reach at least 10 percent of overall higher-vocational enrollments. In parallel, the Opinions on Bachelor's Degree Authorization and Conferment in Bachelor-Level Vocational Schools formally integrated vocational bachelor's programs into China's bachelor's-degree framework and opened a seamless pathway from secondary vocational schools to higher-vocational and bachelor-level vocational education [1]. Subsequently, the Ministry of Education also successively issued key trial documents—Standards for the Establishment of Bachelor-Level Vocational Schools (Trial) and Measures for the Management of Program Setting in Bachelor-Level Vocational Education (Trial)—thereby comprehensively advancing the development and implementation of vocational bachelor's education [2].

As industrial transformation accelerates, national emphasis on and support for vocational bachelor's education have intensified. Shenzhen Polytechnic University (hereafter SPU) has emerged as a leading example, leveraging its strategic location in Shenzhen and the Greater Bay Area to advance deep industry–education integration and school–enterprise collaborative training. Its practices have become a nationwide benchmark for vocational bachelor's education. By analyzing SPU's development framework—particularly its innovations in program design, industry–education integration, and talent cultivation—and summarizing its contributions to regional economic growth, we can distill replicable best-practice models and furnish both theoretical underpinnings and practical guidance for optimizing vocational education across Guangdong Province and beyond. This paper uses SPU as a case study to derive strategic recommendations for vocational bachelor's education development.

1.1 Comparative Developments of Vocational Bachelor's Education at Home and Abroad

Germany and Japan—two advanced economies with long-established vocational traditions—have each cultivated distinctive pathways for vocational bachelor's education, providing valuable benchmarks for China. This subsection reviews their main features and draws key takeaways for our own development strategies.

1.1.1 International Models and Lessons Learned

Germany's vocational bachelor's education has a long history and is epitomized by its dual-track universities and

Universities of Applied Sciences (Fachhochschulen). The dual-track model, exemplified by Baden-Württemberg Cooperative State University (founded in 2009), grants students a dual status as both employees and learners: they receive structured on-the-job training in partner companies while attending university lectures, seamlessly integrating practice with theory. The curriculum blends academic coursework with enterprise-based professional training, ensuring graduates can immediately apply their learning to real-world problems.

Since their inception in the 20th century, Germany's Universities of Applied Sciences have focused squarely on advanced technical practice. From the admissions stage onward, hands-on experience is a prerequisite for certain majors. Typical programs span engineering, business economics, and social work—fields characterized by strong applicational demands. These institutions instill a problem-solving ethos, training students to address workplace challenges and to drive technological innovation and transfer [3]. Empirical evidence shows that graduates from these applied programs match their peers from comprehensive universities in employment rates, contribution to economic growth, and overall student satisfaction.

Curriculum design is dynamically adjusted by each German state according to local industrial strengths and each institution's context. Applied Sciences universities engage deeply with external enterprises to co-design practice-oriented modules; practical coursework often comprises a majority of the credit load, and students undertake capstone projects under joint supervision by faculty and industry experts.

In terms of faculty qualifications, professors must demonstrate scholarly credentials, proven professional expertise, and pedagogical skill—as well as documented achievements in applying scientific knowledge during their careers. Additionally, institutions recruit a sizeable cohort of seasoned industry professionals as adjunct instructors; these experts are required to stay current with production processes, professional skills, and sector trends and to hold relevant engineering or vocational certifications and [4].

Notably, in 2016, Fulda University of Applied Sciences became the first German Fachhochschule authorized to award doctoral degrees—signaling that Germany has now constructed a fully articulated vocational pathway from secondary vocational training through bachelor's, master's, and doctorate levels.

In Japan, vocational education occupies a similarly pivotal role within the national system and serves as a key engine of economic progress. Since the 1990s, the higher-level vocationalization of these programs has solidified their place in the educational landscape. Responding to the demands of the Fourth Industrial Revolution, the Japanese Diet amended legislation in 2017 to establish "Professional Universities" and "Professional Junior Colleges", specializing in fields such as healthcare, fashion, marketing, and nursing. Admissions criteria extend beyond vocational-high-school graduates to include international students and mid-career professionals with relevant experience. Crucially, internship and practicum components must account for at least one-third of the total credit requirement for graduation [5].

In both Germany and Japan, vocational education has become a crucial force driving regional development. At the national level, vocational institutions benefit from government endorsement, embed enterprise practice into their curricula, and promote deep industry–education integration—offering rich precedents for China's ongoing evolution of vocational bachelor's education.

1.1.2 Current Status and Problem Analysis of Vocational Bachelor's Education in China

Compared with Western nations, China's vocational bachelor's initiatives are still in an exploratory phase, having been launched relatively recently. Much of the existing scholarship focuses on macro-level issues—such as policy interpretation and pathway design—while detailed, institution-level case studies remain scarce. Although some research adopts a micro perspective, it tends to zero in on isolated elements (for example, faculty development, talent-cultivation models, or research-to-service translation), resulting in a fragmented picture of the field. [6]. Studies on the underlying frameworks, standards, essential connotations, and developmental trajectories of vocational bachelor's education are still at an early stage. In practice, many programs demonstrate insufficient engagement with industry, and institutional homogeneity has emerged as a significant concern. Despite numerous national policies promoting vocational bachelor's education, concrete schemes for talent cultivation are underdeveloped, and clear guidance on deepening school–enterprise collaboration is lacking [7]. As a result, a systematic, multi-dimensional analysis of vocational bachelor's development layouts warrants further, more rigorous exploration.

1.2 Research Content and Methods

This study employs Shenzhen Polytechnic University (SPU) as its focal case to examine the factors influencing vocational bachelor's education development layouts and to formulate promotion strategies. Our methodological approach combines a literature review, case-study analysis, and comparative analysis. By synthesizing extant literature, we first identify the guiding principles and influencing factors of vocational bachelor's education layout. Then, using SPU as a prototypical example, we analyze its development framework through relevant documents and data, ultimately proposing strategic recommendations across multiple dimensions.

2. Theoretical Foundations of Vocational Bachelor's Education Development Layout

2.1 Concept and Characteristics of Vocational Bachelor's Education

Scholars distinguish traditional bachelor's degrees, vocational bachelor's programs, and vocational-diploma tracks along several dimensions. In terms of educational objectives, vocational-diploma programs primarily train frontline skilled operators, with a core emphasis on hands-on technical proficiency. In contrast, vocational bachelor's programs aim

to cultivate higher-level skilled professionals who can drive industrial and technological upgrading: they offer a deeper theoretical foundation than diploma courses while integrating innovative application of professional skills and technologies. Traditional bachelor's degrees, by comparison, tend to focus on research-oriented talent, emphasizing theoretical reasoning and critical thinking over practical training [8].

Regarding credential value, the 2021 Opinions on Bachelor's Degree Authorization and Conferment in Bachelor-Level Vocational Schools stipulate that vocational bachelor's and traditional bachelor's degrees carry equal weight for employment, postgraduate admission, and civil-service examinations. As an extension of vocational education into the undergraduate tier, vocational bachelor's programs constitute a professional bachelor's education pathway within the full-time undergraduate system, culminating in a Bachelor of Professional Studies [9].

In sum, vocational bachelor's programs are academically commensurate with traditional bachelor's degrees; their distinctions lie chiefly in educational aims, developmental logic, social function, institutional type, and academic orientation. Thus, vocational bachelor's education cannot be substituted by other undergraduate models.

2.2 Principles Guiding the Development Layout of Vocational Bachelor's Education

Drawing on the definition of vocational bachelor's education and international best practices, its development should focus on producing high-level skilled talent to spur local socio-economic growth. In shaping program portfolios, institutions must account for their region's political and economic context. Accordingly, we propose four core principles:

2.2.1 Serve Regional Economic Development

The industrial structure and technological sophistication of a region should drive educational offerings. Vocational bachelor's programs must align closely with local anchor industries, tailoring specialties to match evolving sector needs. By designing curricula that reflect regional strengths—rather than clustering around hyped fields like "AI" or "big data" — schools can ensure that their talent pipeline dovetails organically with the local industrial and innovation chains. For example, Quanzhou Vocational and Technical University leverages the "Jinjiang experience" to assemble bespoke program clusters around its footwear, apparel, and electronics-information industries [10].

2.2.2 Emphasize Institutional Distinctiveness

Vocational bachelor's education differs inherently from both traditional academic bachelor's programs and vocational diploma courses. In talent cultivation, they must blend "professional depth" with "academic orientation". In practice, this means training graduates as on-site engineers capable of solving complex technical problems, rather than mere operators. Consequently, vocational bachelor's curricula must go beyond operational skills to invest substantially in R&D and technological innovation. Program offerings should map onto the "four new" trends—new technologies, new materials, new processes, and new equipment—so that graduates can tackle sophisticated, high-tech challenges and fulfill genuine societal needs for advanced technical talent [11].

2.2.3 Focus on Industry–Education Integration

Mastery of applied skills hinges on real-world enterprise engagement, making industry–education integration indispensable to vocational bachelor's success. From a talent-cultivation standpoint, institutions should champion a holistic "industry–academia–research" model, fully weaving together industry, education, and scientific inquiry to expand collaboration channels. By jointly training students through partnerships between schools and regional industry clusters, all parties can achieve mutually beneficial outcomes. For instance, Chongqing Vocational and Technical University of Mechatronics has unified local vocational schools and industry resources into an integrated vocational-education group, birthing new models of industry–education fusion [12].

2.2.4 Uphold Quality as the Foundation

Zeng Tianshan—a researcher at the Ministry of Education's Center for Vocational Education Development—defines vocational bachelor's education as a "dialectical unity between the bachelor level of vocational education and the vocational type of bachelor education." He argues it must follow core educational principles: with pedagogical integrity as its base, professional relevance as its foundation, and academic rigor as its defining quality, all while highlighting its unique identity and meeting true undergraduate standards [13]. Ensuring uncompromising quality manifests in two key areas. First, from a faculty perspective, institutions must build a team of dual-qualified instructors who demonstrate both solid theoretical grounding and robust practical expertise. Second, regarding curriculum and program development, schools should design flagship — "signature" — courses, deepen industry–education integration to produce graduates with integrated theoretical and hands-on skills, unify on-the-job training, coursework, competitions, and certification, and sustain high graduate employment rates. Only by maintaining exacting standards can institutions earn and retain the trust and support of governments, industries, employers, parents, and students, thereby securing a stable, enduring reputation.

These principles reflect common priorities across diverse regions, though their implementation will necessarily be shaped by local political and economic conditions.

2.3 Factors Influencing the Development Layout of Vocational Bachelor's Education

2.3.1 Economic Development Level and Industrial Structure

In the 1980s, Paul Romer's endogenous economic growth theory proposed that the accumulation of human capital and technological upgrading serve as the internal driving forces for regional development. As economies advance, the demand for highly skilled technical talent surges, with vocational bachelor's education playing a key role in meeting this

demand from the talent supply side. Analyzing the development layout of vocational bachelor's institutions in China reveals that they are primarily concentrated in the resource-rich, enterprise-intensive coastal regions, such as Guangdong and Zhejiang. In these areas, school–enterprise cooperation is deeply embedded, and the demand for high-skilled talent in the evolving industrial chain continues to grow. However, vocational institutions in the central and western regions are fewer in number, with underdeveloped training bases. Vocational bachelor's programs in different regions primarily focus on cultivating high-skilled professionals who can support local pillar industries. For example, vocational colleges in eastern China focus on fields like new energy vehicles, artificial intelligence, and cross-border e-commerce, while institutions in Yunnan and Guizhou concentrate on tourism and related industries.

2.3.2 Educational Resource Endowment and Policy Support

According to the Ministry of Education, the proportion of vocational bachelor's faculty holding a doctoral degree should not be less than 15%, and the proportion of "dual-high" faculty (those with both academic and practical expertise) should be no less than 50%. To improve the quantity and quality of faculty, local governments need to increase their support and investment in educational resources. This includes providing favorable policies for attracting talent, optimizing training bases, offering more opportunities for faculty development, and recruiting more enterprise-based teachers with extensive practical experience. Additionally, it is important to cultivate more "dual-qualified" teachers—those skilled both in teaching and hands-on industry practice. These efforts will help tighten the connections between the education chain, the talent chain, and the innovation chain, ultimately raising the quality of vocational bachelor's education.

2.3.3 Social Concepts and Cultural Traditions

Germany, from the Middle Ages onward, gradually formed systems that emphasized apprenticeships and guilds, where industries and enterprises viewed vocational training as a vital mission. In Germany and other Western countries, citizens engaged in technical vocational work do not face societal stigma, and employers do not discriminate against graduates from applied universities. On the contrary, these graduates are offered more opportunities. In contrast, China faces a dual challenge of labor shortages and a lack of skilled workers, exacerbated by the widespread issue of "academic credentialism" and "bias against skills". This has led to insufficient support for vocational education, and its development has been hindered by societal misconceptions. Addressing these biases and promoting a more accurate understanding of vocational education remains a key challenge for China's educational development [14].

Considering the political, economic, and cultural factors discussed above, this paper will focus on Shenzhen Polytechnic University's (SPU) vocational bachelor's education layout, analyzing its development outcomes and the experiences that can inform future efforts in Guangdong Province. This includes examining talent cultivation, institutional distinctiveness, and industry–education integration.

3. Analysis of SPU's Vocational Bachelor's Education Development Layout

3.1 Analysis of SPU's Vocational Bachelor's Education Development Layout

3.1.1 Historical Evolution and Current Status

Shenzhen Polytechnic University (SPU) was founded in 1993 and has since aligned its vocational bachelor's offerings with national strategic directives on modern vocational education. Branded as a "high-level applied technical university", SPU concentrates its programs around Shenzhen's key industries—namely next-generation information technology and advanced equipment manufacturing. In June 2023, the Ministry of Education approved the consolidation of Shenzhen Polytechnic into SPU, making it the first "dual-high" institution upgraded under the trial Standards for Establishing Bachelor-Level Vocational Schools. Furthermore, Shenzhen's 14th Five-Year Plan designates SPU as a "national model benchmark for vocational bachelor's education", and its new Shenshan campus—due to open in 2027—will expand capacity by 15,000 students [15].

3.1.2 Institutional Positioning and Distinctive Strengths

SPU aims to cultivate high-level technical-skill professionals—akin to "technical engineers"—who can execute product manufacturing and services, facilitate technology transfer, solve complex problems, and perform advanced operations with strong professional competence, innovative capacity, methodological acumen, leadership skills, sustainable-development awareness, and comprehensive vocational literacy [16]. To achieve this, the university emphasizes three pillars: regional relevance, interdisciplinary talent cultivation, and international engagement. These core features will be unpacked in the following practical exploration of SPU's development layout.

3.2 Practical Explorations in Development Layout

SPU's innovations in vocational bachelor's education center on program design, talent-cultivation models, faculty development, and industry–education integration.

3.2.1 Program Design Aligned with Local Industry Demand

Drawing on extensive market research, SPU leverages Shenzhen's unique advantages to offer programs that reflect both current technological trends and employer requirements, while phasing out outdated majors. Currently, engineering disciplines form the core of a balanced, multidisciplinary portfolio. The university collaborates with leading local enterprises—such as Huawei, DJI, and Tencent—to co-develop courses that mirror precise market needs; course topics include industrial robotics and intelligent sensing technologies.

Program-to-market alignment exceeds 90%. Moreover, SPU organizes its offerings into 15 professional clusters (for example, electronic information, intelligent manufacturing,

and digital creativity), thereby creating a "professional chain linking the industrial chain". This approach achieves a 100% match with Shenzhen's "20 + 8" industry clusters.

3.2.2 Innovations in Talent-Cultivation Models

According to Party Secretary Yang Xinbin, vocational bachelor's education must cultivate students with composite, adaptable skillsets—rooted in solid theoretical foundations to tackle complex challenges—and foster their capacity for creative application and independent learning. Embracing the ethos of "broad foundation, deep specialization, strong technical ability, and enhanced quality," SPU mobilizes a four-party alliance of government, academia, industry, and enterprises to build a three-dimensional cooperation network.

To implement this model, faculty and enterprise engineers co-mentor student projects, ensuring synchronous collaboration. SPU has established 18 industry-specific colleges in partnership with Fortune 500 companies (including Huawei and BYD), and has co-created the Shenzhen Municipal Industry–Education Consortium to advance an integrated "teaching – training – R&D – employment" pipeline. In addition, the university hosts three academicians' workstations and four joint laboratories, securing over RMB 700 million in research funding over the past five years—thereby closing the loop of "industry – education – research – application". SPU also collaborates with Huawei to develop internationalized curricula in mobile and data communications and provides technical training to Belt and Road Initiative partner countries.

Concurrently, a 3+2 articulation program with South China Normal University links SPU's vocational bachelor's programs to applied bachelor's degrees, offering a valuable pilot for enhancing students' integrative skillsets [15].

3.2.3 Faculty Team Development

Dual-qualified ("double-teacher") professionals form the cornerstone of vocational bachelor's faculty. SPU employs a multi-pronged approach to assemble a high-caliber dual-qualified team. First, recruitment gives priority to candidates with advanced degrees and substantial industry experience. Second, the university invests heavily in in-service training, dispatching no fewer than 50 faculty members each year to enterprises for hands-on secondments. By co-building industry practice bases with corporate partners, SPU enhances instructors' ability to translate cutting-edge technologies into classroom teaching. As of now, 46.19% of full-time faculty hold doctorates, and over 90% meet the dual-qualification standard.

3.2.4 International Exchange and Cooperation

SPU simultaneously "imports" and "exports" best practices to foster a global outlook. On the import side, the university benchmarks leading overseas vocational institutions, adopting their strengths to enrich its own programs and broaden students' international perspectives. Conversely, SPU "exports" its achievements—most notably by securing UNESCO's Chair in "Digitalization of Vocational and Technical Education" and promoting the "Shenzhen model" of vocational training abroad. This two-way engagement has elevated SPU's global reputation and unlocked new multinational partnerships. To date, the university has agreements with 186 institutions across 41 countries and regions, has established 10 overseas vocational-training centers, and regularly facilitates faculty and student exchanges to advance China's vocational-education footprint worldwide.

SPU's development layout shows that by tightly aligning its program offerings with the region's economic development trajectory and actively mobilizing support from government, industry, and enterprises—across talent cultivation, faculty development, industry–education integration, and international cooperation—the university has rolled out multiple initiatives that have delivered positive results, as detailed below.

3.3 Outcomes and Best Practices of SPU's Development Layout

By innovating talent-cultivation models, strengthening its dual-qualified faculty, deepening industry–education integration, and expanding international cooperation, SPU has realized significant gains:

3.3.1 Marked Improvement in Graduate Outcomes

SPU's first-time employment rate has exceeded 97% for several consecutive years—surpassing Guangdong Province averages—and reached 98.4% in 2023. Of those graduates, 16% joined Fortune 500 companies such as Huawei and Ping An, and 29% entered leading industry firms. Average starting monthly salaries climbed to RMB 6,604 for the class of 2022, outpacing the national mean for "double-high" institutions, while over 70% of STEM graduates secured jobs directly aligned with their majors [17].

3.3.2 Enhanced Capacity to Serve Regional Economic Development

The university has supplied more than 20,000 technical professionals to Shenzhen enterprises and contributed to over 300 corporate technical-upgrade projects. In the past five years, SPU secured 381 national invention and PCT patents, authored 106 international/national/industry standards, and achieved breakthroughs in ICT and advanced materials. Its research portfolio includes 255 provincial-and-above projects focusing on intelligent connected vehicles and integrated circuits.

3.3.3 Growing Social Recognition

In 2022, SPU was named a "National Demonstration School for Vocational Bachelor's Education" by the Ministry of Education and honored as a "Shenzhen Outstanding Contribution Unit for Industry-Academia-Research Collaboration". In the 2024 ABC China rankings of vocational bachelor's universities, it claimed the top spot, with admission scores climbing year after year. Applicant interest has surged: undergraduate-program enrollment reached 100% of targets, associate-to-bachelor conversion rates hit 95%, and student quality now rivals that of traditional

first-tier universities.

These advances in graduate quality and institutional prestige have created a virtuous cycle: stronger social recognition attracts more enterprise partnerships and top-tier faculty, which in turn expands SPU's international collaborations and deepens its service to regional industry. SPU's exemplary strategies thus offer a replicable framework for other vocational bachelor's institutions across Guangdong Province.

4. Reflections and Recommendations on Guangdong Province's Vocational Bachelor's Education Development Layout

4.1 Current Status of Vocational Bachelor's Education in Guangdong Province

4.1.1 Scale and Structure of Development

Guangdong Province has actively promoted the upgrading of vocational colleges and the expansion of their enrollment capacities. To date, four institutions have completed the transition to vocational bachelor's status: two public (Shenzhen Polytechnic University—formerly Shenzhen Polytechnic College—and Guangdong Industry Polytechnic University—formerly Guangdong Industry Polytechnic College) and two private (Guangzhou Vocational University of Science and Technology and Guangdong Business and Technology University). In 2024 alone, three more schools were elevated—Guangzhou Polytechnic University (formerly Panyu Vocational College), Shunde Polytechnic University (formerly Shunde Polytechnic College), and Shenzhen Institute of Information Technology—putting Guangdong at the forefront nationwide in newly upgraded institutions. As regional industries undergo rapid transformation and upgrading, the demand for highly skilled personnel continues to rise. In the Pearl River Delta, robust labor demand coexists with a shortage of senior technicians, leaving many enterprises understaffed. Survey data show that 59.53% of employers stipulate specific technical-grade requirements for job applicants, and this pressing need for high-level talent has driven vocational education to evolve more swiftly, constantly adding value and raising graduate competence.

To keep pace with this burgeoning demand, Guangdong's vocational institutions have deepened school–enterprise collaboration and industry–education integration. For example, Guangzhou Vocational University of Science and Technology launched the "Three-Ones Project," establishing one high-level industry academy per professional cluster, identifying at least one integration project per major, and embedding enterprise collaboration into every core course. Meanwhile, Guangdong is vigorously advancing city-region industry–education consortia and sector-wide integration communities: Shenzhen's city-region consortium and Foshan's "Two Highs and Four News" consortia were among the first batch approved by the Ministry of Education, placing Guangdong second in the nation for approved consortia [18]. Concurrently, the provincial government has invested substantial funds and rolled out systematic programs to cultivate more high-quality technical talent that meets societal needs.

Regarding faculty resources, data from the Guangdong Provincial Department of Education indicate that in 2023 the authorized staffing level for vocational colleges reached 53,817 positions—up 10.13% from 2022—while total personnel climbed to 71,704, a 12.33% increase. Full-time teachers totaled 58,404, marking an 18.12% year-on-year rise. The student–teacher ratio dipped slightly to 19.23:1, and the proportion of dual-qualified full-time teachers rose to 61.27%, surpassing previous years.

On graduate outcomes, both the number of graduates and their successful employment placements in 2023 grew by over 70% compared to 2022, with a graduating cohort of 550,000—a 91.46% year-on-year increase. Employment quality and satisfaction have improved steadily: employer and parent approval both exceed 95%, and average monthly income for graduates reached RMB 4,190, up 6.89% from the prior year [17].

4.1.2 Issues and Challenges

Despite these advances, Guangdong's vocational bachelor's education layout faces several challenges:

(a) Uneven Geographical Distribution. Most institutions are heavily clustered in the Pearl River Delta—particularly Guangzhou and Shenzhen—resulting in imbalanced resource allocation. Amid a rapid expansion of higher-vocational enrollments, many colleges in Guangdong face strained infrastructure and limited capacity.

(b) High Program Redundancy. E-commerce and computer-science majors together account for over 40% of offerings, limiting program diversity.

(c) Limited Depth in School–Enterprise Partnerships. Misalignment persists between employer needs and institutional training goals. Colleges often emphasize curricular content over alignment with industry skill requirements, and partnership initiatives—driven by profitability—lack strategic depth. Moreover, existing integration platforms have yet to achieve their full potential, underscoring the need for more replicable, Guangdong-specific models.

(d) Lagging Graduate Studies Development. In comparison with Jiangsu and Zhejiang, Guangdong trails in establishing master's-level programs, highlighting the urgency of accelerating high-level faculty cultivation.

(e) Persistent Employer Bias. Credentialism remains in some enterprises. As Chen Yuqi—Secretary-General of the Guangdong Strategic Industry Talent Cultivation and Evaluation Consortium—notes, many companies still undervalue the abilities of vocational bachelor's graduates and harbor prejudices, questioning their competence.

Vocational bachelor's education is a key driver of industrial transformation, technological innovation, technology transfer, and high-quality industrial development. To further refine Guangdong's development layout—benchmarking best practices and pursuing continuous improvement—this paper

will distill SPU's targeted measures and offer actionable insights for the province's next phase.

4.2 Insights from SPU for Guangdong Province's Vocational Bachelor's Education

As a trailblazer in advancing vocational bachelor's programs, SPU has galvanized a powerful alliance among government, academia, industry, and enterprises, yielding numerous innovations. By distilling SPU's distinctive practices, we draw three key lessons for Guangdong's broader vocational bachelor's development:

4.2.1 Maintain a Focus on Regional Economic Service

Guided by the principle of serving the region's high-quality socio-economic development, SPU has clarified its institutional positioning and structured its program offerings around the Greater Bay Area's "20 + 8" industry clusters, dynamically tailoring specialties to align with regional competitive strengths [14]. Other vocational colleges in Guangdong have similarly begun integrating local characteristic industries into their curricula. For example, Chaozhou Technician College—through its Cultural Technician Training Demonstration Base—incorporates Kung Fu tea production and Chao embroidery, both local intangible cultural heritage, into its program design to bolster regional industry. Likewise, Guangzhou Vocational University of Science and Technology has expanded its portfolio with majors in intelligent manufacturing, e-commerce, and artificial intelligence, closely aligning these offerings with the Bay Area's manufacturing and high-tech sectors, thereby reinforcing local economic growth.

4.2.2 Highlight Institutional Distinctiveness to Deepen Industry–Education Integration

SPU has established 16 collaborative platforms—ranging from the NMG–BJ Precision Machinery Academy to the Huawei 5G+ Digital Talent Base—creating four models of joint talent cultivation: technology alliances, coordinated service, dual-innovation incubation, and international partnership [15]. Furthermore, the university fully participates in enterprise R&D and product-upgrading processes; by co-founding specialty industry colleges with leading firms such as Huawei and BYD, it develops industry-standard curricula and co-designs talent-development plans, thereby ensuring seamless alignment between theory and practice. In this way, SPU exemplifies its unwavering commitment to the deep integration of industry, education, and research. At the vocational-bachelor stage—where technical proficiency and interdisciplinary capabilities are held to even higher standards—schools and enterprises must move beyond superficial exchanges, forging closer, strategic partnerships to achieve a more advanced level of industry–education synergy.

4.2.3 Strengthen International Exchange and Collaboration

Developed countries initiated vocational-education reforms early and have since amassed a wealth of case studies and best practices. Accordingly, Guangdong's vocational colleges should introduce advanced international curricula, teaching materials, standards, and other educational resources—then adapt and localize them to meet domestic needs. What's more, by participating in multinational partnerships and building global research platforms, they can raise their international profiles and forge stronger connections with overseas institutions and networks. SPU's multi-layered, cross-sector global partnerships have not only internationalized its own programs but also contributed significantly to the Belt and Road Initiative's goals of capacity cooperation and cultural exchange.

Further, Guangdong should encourage its vocational colleges to participate in WorldSkills and national skills competitions, and to host training centers, thereby raising competition standards internationally.

Finally, leveraging specialized expertise, colleges can expand their "vocational education exports". To date, SPU has delivered technical training to over 200,000 overseas participants.

4.3 Policy Recommendations for Guangdong Province's Vocational Bachelor's Education Development Layout

Optimizing Guangdong Province's vocational bachelor's education framework cannot be accomplished by schools alone; it requires a concerted effort from government bodies, educational institutions, enterprises, and other stakeholders. Drawing on the principles and influencing factors analyzed above, we offer the following recommendations—organized by government policy, school–enterprise collaboration, and institutional initiatives:

4.3.1 Enhance Top-Level Planning and Refine Structural Layout

Since pilot reforms began in 2019, vocational bachelor's education has been an iterative learning process. The Provincial Department of Education is now implementing the Opinions on Deepening the Reform of the Modern Vocational Education System, strengthening central–local cooperation and coordinating multiple ministries to drive systemic progress. In 2023, Guangdong earmarked RMB 400 million in "upgrade" funds for vocational colleges and integrated funding-use metrics into institutional evaluations [19]. To further bolster provincial vocational bachelor's development, local governments must provide long-term, comprehensive institutional safeguards from a top-level perspective. This requires fully accounting for regional economic disparities, implementing a "one school, one policy" mechanism, and setting each institution's positioning and evaluation criteria according to its development stage—thereby delivering timely, precise financial and policy support to different institutional tiers [20]. Moreover, governments should adapt to local economic conditions by allocating education funding on demand and enacting policies that incentivize leading enterprises and universities in prosperous areas to channel high-quality resources to under-resourced colleges.

From an industry–education integration standpoint, in 2023 Guangdong Province selected the first batch of 63 high-quality enterprises to host vocational-school apprentices, creating a bridge to align educational and industrial resources. However, government support and guidance for school–

enterprise collaboration have been insufficient. Existing policies must be fine-tuned to better align the conflicting aims of institutions and enterprises, thereby bolstering support for nurturing well-rounded, industry-ready graduates.

4.3.2 Bolster Faculty Development to Elevate Teaching and Learning

Since the 1990s, the share of dual-qualified teachers has served as a key barometer of vocational-college quality. Guangdong Province has continuously advanced the construction of high-level institutions and specialty programs, designating 45 schools as provincial "high-level" vocational colleges. However, heavy teaching loads—excessive contact hours and administrative duties—leave faculty with little time to engage in enterprise placements and hone their practical skills, revealing substantial room for improvement in faculty development.

4.3.3 Deepen Industry–Education Integration and Promote School–Enterprise Co-Cultivation of Talent

Vocational bachelor's education aims to cultivate talent through a symbiotic school–enterprise partnership. By adopting SPU's specialty-industry college model, educational institutions and companies collaboratively explore ways to train industry professionals. In doing so, they systematically gather and refine best practices across multiple domains — including faculty development, student training, and curriculum design—thereby driving continuous improvements in each area.

In collaboration with BYD, SPU pioneered a fresh approach to industry–education integration: sharing faculty, co-supervising student cohorts, and conducting joint research and development. Together, they established the BYD Applied Technology College, which simultaneously advances talent cultivation, innovation incubation, and standards formulation. Confronted with the nationwide challenge of superficial school–enterprise ties, SVTU has tapped its strategic location and institutional platform to continuously explore new partnership models. These initiatives have yielded impressive gains in both student outcomes and the growth of dual-qualified faculty, offering a replicable template for industry–education integration across Guangdong Province.

Given that each city in Guangdong Province specializes in distinct key industries, optimizing the layout of vocational bachelor's programs at the municipal level demands careful attention to how well schools and enterprises align and engage with one another. To deepen industry–education integration, institutions should adopt dual-track training models and collaborate with leading local firms to establish industry colleges. Such partnerships will foster long-term, stable cooperation and ensure that talent development remains closely attuned to regional industrial strengths [21].

5. Conclusion and Outlook

Vocational bachelor's education constitutes a crucial pillar within the higher-education system and underpins the rational diversification of tertiary education across nations. It plays a pivotal role in cultivating high-quality, application-oriented talent and serves as the key pathway to resolving China's structural "skills shortage" and "youth employment" challenges.

SPU has pioneered innovative development strategies — precisely aligning programs with industry needs, deepening industry–education integration, reinventing talent-cultivation models, and expanding global partnerships—thus offering a scalable "Shenzhen model" for vocational bachelor's education.

For Guangdong Province to transition from pilot initiatives to a fully institutionalized system, it must mobilize government agencies, industries, enterprises, and educational institutions in concert. By leveraging SVTU's demonstrative impact and regional policy strengths, the province can accelerate the systemic advancement of vocational bachelor's education. In doing so, it will forge seamless connections among the education chain, talent chain, industry chain, and innovation chain, thereby providing robust human-capital support for sustained regional socio-economic development.

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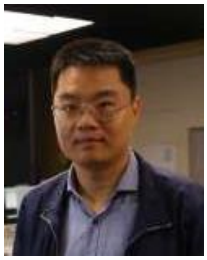
Author Profile

Ken Wang received the master degree in University of Leeds in 2012, and doctor degree in University of Leicester in 2017. He is now lecturer in Shenzhen Polytechnic University.



Kan Yuan received the doctor degree in Wuhan University. He is now professor in Shenzhen Polytechnic University and also vice president of Shenzhen digital creative industry association.