

## ORIGINAL ARTICLE

# Transformations in higher vocational education in Japan

Futao Huang\*

Research Institute for Higher Education, Hiroshima University, Higashi-Hiroshima 739-8512, Hiroshima Prefecture, Japan

**ABSTRACT**

This study examines the evolving landscape of vocational education in Japan, driven by transformative policies, strategic initiatives, and substantial reforms. The transition of vocational education to higher education, particularly through the establishment of professional and vocational universities, is explored. Emphasizing the impact on tertiary-level vocational education, the research investigates collaborative approaches, government initiatives, continuous improvement strategies, and the evolving role of educators. Demographic shifts and societal needs are considered within the context of challenges and opportunities. The establishment of professional and vocational universities is analyzed in alignment with international trends, revealing its pivotal role in the global discourse on practical education within higher education. The study identifies challenges such as program governance, lack of articulation pathways, and societal expectations, while highlighting opportunities for reform. Implications for research, policy, and institutional practice are discussed, urging sustained scholarly attention, flexible accreditation frameworks, and international benchmarking to foster a dynamic and responsive higher education system.

**Key words:** vocational education, Japanese higher education, professional and vocational universities, policy reforms

**INTRODUCTION**

The current state of higher education in Japan is at a critical crossroads, requiring attention to the diverse needs of its learner population. The recent report from Japan's Central Education Council emphasizes the necessity for a fundamental reassessment of the relationship between higher education and vocational training in response to changes in industrial and employment structures. The evolving societal demands and the growing third sector underscore the urgency for a comprehensive reevaluation of education's role in developing talent aligned with the dynamic demands of industries.<sup>[1]</sup> Moreover, the expanding range of learner backgrounds, including professionals seeking reskilling opportunities, emphasizes the need for an adaptable and responsive higher education system. In line with the

global trend, as seen in the United Nations Educational, Scientific, and Cultural Organization (UNESCO) recommendation on technical and vocational education and training (TVET),<sup>[2]</sup> universities are expected to provide practical education that promotes employment and encourages lifelong learning.<sup>[3,4]</sup>

In light of both global and domestic developments, this research embarks on a comprehensive examination of the transformative dynamics within Japanese higher education, with a specific focus on vocational education. Subsequent sections will delve into historical context, current status of Japanese higher education, characteristics of vocational education, changing policies and strategies in higher vocational education, challenges, and future directions, offering a nuanced analysis of the multifaceted changes shaping the educational landscape.

**\*Corresponding Author:**

Futao Huang, Research Institute for Higher Education, Hiroshima University, 1-3-2 Kagamiyama, Higashi-Hiroshima 739-8512, Hiroshima Prefecture, Japan.

Email: [huangfutao@gmail.com](mailto:huangfutao@gmail.com); <https://orcid.org/0000-0003-1322-7784>

Received: 5 February 2024; Revised: 1 March 2024; Accepted: 5 March 2024

<https://doi.org/10.54844/vte.2024.0543>

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, which allows others to copy and redistribute the material in any medium or format non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

While numerous studies have explored vocational education in Japan, it's worth noting that the majority belong to the non-university sector, encompassing junior colleges and senior high school levels.<sup>[5,6]</sup> This research aims to bridge this gap by contributing to the discourse on recent changes in vocational education within the Japanese higher education framework. By examining global trends and challenges, the paper seeks to shed light on the transformative dynamics within Japanese higher education, recognizing the changing nature of industries, employment structures, and the diverse needs of learners. Regarding the structure of this study, the following section reviews the existing literature. The third section is about a short introduction to the historical context and the current situation of Japanese higher education. The fourth section is concerned with changing policies of vocational education in Japan, followed by the section of challenges and opportunities. The paper concludes by presenting main findings, offering implications and pointing out future research directions.

## LITERATURE REVIEW

The evolution of higher education in Japan unfolds as a dynamic narrative shaped by the intricate interplay of societal demands, economic shifts, and global trends. The nation grapples with the imperative to address diverse learner needs, particularly in the realms of vocational education, necessitating a nuanced understanding of the current educational landscape.

Kawai's research traces the historical changes in the positioning of vocational education in Japan since modernization and suggests the necessity of designing systems that go beyond high school education and consider diverse career paths, incorporating perspectives such as high education collaboration.<sup>[7]</sup> Terada's historical perspective on the establishment and development of professions for high school vocational education provides valuable insights but primarily focuses on the past.<sup>[8]</sup> Similarly, Yokoo *et al.*'s research explores the historical development of technology and vocational education, offering crucial context but lacking extensive coverage of the current state and future directions.<sup>[9]</sup> Furthermore, a review of the works of Yoshimoto, Kaneko, and Inenaga add depth to the understanding of Japan's tertiary education landscape. For example, Yoshimoto's paper delves into the changing processes of development in undergraduate degrees and titles, examining their international recognition.<sup>[10]</sup> Kaneko highlights the reform in 2017, introducing "professional and vocational universities" and the complex relationship between universities and specialized vocational education.<sup>[11]</sup> Inenaga's research underscores the need for comprehensive discussions on

Japan's vocational education design, emphasizing the importance of a well-structured foundation within the university system. According to Inage, the tangible commitment of Japan to redefine higher education is embodied in the inauguration of the "Professional and Vocational University" in 2019. This institution aims to bridge the gap between theoretical academic knowledge and practical industry demands, drawing parallels with international trends set by the Bologna Declaration in Europe.<sup>[12]</sup> Further, many researchers in other countries also conducted research into higher vocational and technical education in the global and international perspectives. For example, Cameron and Hanlon-Rose discussed how global trends like technological advancement and demographic shifts affect TVET, necessitating educators and graduates to have global competencies.<sup>[13]</sup> Maclean and Broek *et al.* offered global perspectives on integrating TVET within higher education.<sup>[14,15]</sup> In addition, some case studies suggested key issues concerning the development higher vocational education. For example, based on the case study of South Africa, Sebola argued that, for TVET colleges to become higher learning institutions, competency standards for students and staff must align with higher education criteria.<sup>[16]</sup>

While existing literature provides a comprehensive overview, the predominant focus on non-university sectors leaves gaps in our understanding of Japan's unique approach. Also, a nuanced exploration of Japan's specific approach is essential. Studies by Horai and Terada shed light on the characteristics of Japanese technical vocational education and training, emphasizing the recent shift to the higher education level and the adoption of Western models. However, a notable gap exists in addressing the contemporary landscape and the specific challenges and opportunities faced in integrating vocational and technical education within higher education.

This comprehensive literature review meticulously identifies critical gaps, laying the foundation for a profound understanding of the dynamics of vocational and technical education within Japanese higher education. It prompts three central research questions.

Research question 1: How have specific educational policies and practices facilitated the recent transition of vocational education institutes to higher education levels in Japan?

Research question 2: In what ways does the establishment of the "Professional and Vocational University" in Japan align with international trends in vocational education? What unique features and advancements does Japan's model offer?

Research question 3: What are the current challenges and opportunities for universities in Japan to effectively provide practical education that meets the evolving needs of industries and encourages lifelong learning?

In order to address these research questions, the research primarily employs the method of documentation analysis which is of relevance and importance to the understanding of changes occurred in vocational education, and newly-established higher vocational education in Japan for the last decades.

## HISTORICAL CONTEXT AND CURRENT STATE OF JAPANESE HIGHER EDUCATION

### *Evolution of Japanese higher education*

Japan's journey in higher education reflects a distinctive fusion of traditional values and global influences. Historically, the focus on teaching activities for labor force development and rapid research progression, inspired by the German Humboldtian model, has significantly influenced the educational landscape. However, diverse perspectives on the German model, coupled with international ideas, have nurtured diversity in Japanese higher education. The historical role and evolution of universities in Japan are intricately woven into the country's cultural narrative.<sup>[17]</sup>

Traditionally, education in Japan was characterized by Confucian ideals, placing emphasis on moral development and loyalty to the state. The influence of Buddhism also played a role in shaping educational institutions. However, the Meiji era stands out in Japanese history as a period of radical transformation initiated by the Meiji Restoration in 1868. Japan underwent a comprehensive modernization process, embracing Western industrial and educational models. The founding of Tokyo Imperial University in 1877 symbolized this shift, signifying Japan's commitment to integrating Western knowledge while preserving its cultural identity. This institution laid the groundwork for the country's higher education system, shaping its trajectory for decades to come.

Following World War II, Japan's higher education landscape underwent significant transformation, strongly influenced by ideas from the United States. This period saw the establishment of a diverse array of institutions with varying types and levels, solidifying Japan's commitment to a multifaceted higher education system. From the perspective of vocational education, in the postwar period, Japan's economic growth led to a diverse industrial structure, requiring comprehensive vocational training. The 1969 New Vocational Training Act aimed to address this need but faced challenges as

more middle school graduates pursued high school. Public vocational training programs struggled, leading to a decline in enrollment quality. In-house vocational training varied among large and small enterprises, with utilities leading in prevalence. Vocational schools, predominantly female-oriented, evolved into technical colleges, offering specialized programs. Despite disparities, vocational schools played a crucial role in skill development for various professions.<sup>[18]</sup>

### *Structure and characteristics*

Japanese higher education stands as a testament to a unique and intricate tripartite structure, encompassing national universities, local public universities, and private institutions. Private universities, commanding a significant presence, contribute to over 70% of all higher education institutions, playing a crucial role predominantly in undergraduate education, with a particular focus on humanities and social sciences. National universities, which are established, administered, and funded by the central government, steeped in traditions modeled after German research-oriented approaches, concentrate on intensive research endeavors, enjoying substantial government funding and thus making significant contributions to the advancement of scientific research.

This hierarchical structure not only shapes the academic landscape but also delineates the social reputation of institutions. At the summit are national universities, seen as bastions of scholarly excellence, further defining the academic hierarchy. On the local front, public universities, administered by local authorities, play a distinctive role by prioritizing the production of graduates tailored for local economic development. These institutions serve as crucial links between academia and the specific needs of regional industries and communities.<sup>[19]</sup>

Examining the roles played by different sectors within the Japanese higher education framework reveals a multifaceted and adaptive entity that responds dynamically to societal demands. Universities, as intellectual hubs, foster a culture of inquiry, research excellence, and global engagement. This commitment is evident in collaborative research projects, international student exchange programs, and a pervasive emphasis on addressing societal challenges. Notably, universities play a pivotal role in forming partnerships with industries, ensuring that academic programs remain aligned with the rapidly evolving needs of the workforce and broader community involvement.

Junior colleges occupy a unique space within the spectrum, acting as intermediaries between secondary education and universities. These institutions provide a specialized curriculum, offering students a pathway to

develop high-level expertise. This approach aligns with societal demands for diversified functions in higher education and bridges the gap between general education and specialized vocational training. While only part of their program is formally considered higher education, technical colleges and vocational schools are indispensable components of the Japanese higher education mosaic. These institutions prioritize practical education through collaboration with businesses, emphasizing the integration of real-world knowledge into their curricula. The focus on practical excellence aligns seamlessly with the pragmatism deeply ingrained in Japanese culture.

Encouraging institutions to articulate their individuality and characteristics becomes paramount in understanding the nuanced roles within this diverse higher education landscape. This approach recognizes the varied functions of universities and acknowledges the necessity for each institution to tailor its offerings based on unique strengths, thereby fostering a gradual differentiation of functions among universities.

Transitioning to the specific context of vocational education within higher education in Japan, the frameworks for practical education are worth exploring. These frameworks involve collaborative efforts with businesses and the integration of practical knowledge into academic programs. Quality assurance mechanisms and practical teaching methods strive to bridge the gap between theoretical learning and real-world application. The commitment to producing graduates equipped with both theoretical knowledge and practical skills is evident in collaborations ensuring that academic programs align seamlessly with industry needs.<sup>[20]</sup>

Practical teaching methods within Japanese higher education prioritize hands-on experiences, reinforcing the application of theoretical concepts in real-world scenarios. This emphasis on practical excellence not only enriches the learning experience for students but also ensures that graduates are well-prepared for the challenges of the job market. Collaborations with businesses play a vital role in shaping these practical education frameworks, ensuring that academic programs remain relevant, innovative, and responsive to the evolving needs of the workforce.<sup>[21]</sup>

In short, this comprehensive overview provides a nuanced understanding of the roles and structures within Japanese higher education. It underscores the adaptability of the system, its responsiveness to societal needs, and the importance of individuality and collaboration. Moreover, the exploration of vocational education within this framework highlights the commitment to practical excellence and the seamless integration of theoretical and real-world knowledge,

ensuring graduates are well-prepared for the challenges and opportunities of the modern workforce.

## EVALUATION OF POLICIES ON VOCATIONAL EDUCATION

Japan's higher education landscape has witnessed a transformative evolution marked by changing policies, strategic initiatives, and reforms in vocational and technical education. This exploration delves into the nuanced shifts over time, with a particular focus on the emergence, characteristics, and impacts of professional and vocational universities on higher vocational education in Japan.<sup>[22,23]</sup>

### *Shift in policies and strategies*

The evolution in policies governing vocational education in Japan reflects a strategic response to diverse student needs and a commitment to ensuring the quality of vocational education. A pivotal moment occurred in 2011 with the release of the document "Future of Career and Vocational Education in Schools", which emphasized increased collaboration between educational institutions and industries.<sup>[24]</sup> This collaboration became instrumental in enhancing practical education, thereby shaping the future trajectory of Japanese higher education. While the traditional demarcation between academic and vocational education faced challenges, the Central Education Council's 2011 report marked a departure from this separation. It advocated for a holistic approach to education, recognizing the changing societal landscape and the need for multifaceted aspirations and learner requirements.

The conversation gained momentum with insights from the 2015 panel of experts on "Practical Vocational Education in New Higher Education Institutions", acknowledging the diverse needs of young individuals amid declining corporate training functions. To address these challenges, there was a call for the establishment of new higher education institutions specifically focused on practical vocational education, overcoming limitations in professional training at the higher education level.<sup>[25]</sup>

To address diverse needs effectively, institutions were required to adopt a flexible approach accommodating a spectrum of academic and vocational pursuits. Striking a balance between academic rigor and vocational relevance became paramount to prepare students for the intricacies of the contemporary job market. Together with other relevant policies and strategies, key points in relation to reforms and improvements on vocational education can be summarized below.

First, the emphasis on increased collaboration between educational institutions and industries, as highlighted in



the 2011 document, played a pivotal role in shaping Japan's current higher education landscape. This collaboration represents a dynamic interplay, where educational institutions align their curricula with industry needs, creating a symbiotic relationship. It not only enhances the practical relevance of education but also bridges the gap between academic knowledge and real-world application. Second, the Japanese government has consistently underscored the importance of enhancing vocational education, especially for institutions such as high schools, junior colleges, and technical colleges. Defining the functions and characteristics of each educational institution has been a focal point, aiming to focus on specific roles and ensuring that vocational education meets the evolving demands of the workforce. Clear definitions enable each educational institution to play a specialized role, ensuring that vocational education remains dynamic and responsive to emerging trends. Third, strategies for ensuring continuous improvement in vocational education and career guidance are essential to meet the changing demands of the job market. This includes identifying key functions, roles, and competencies required for different professions and aligning educational programs with these requirements. Continuous improvement in vocational education aligns with Japan's commitment to excellence. Regular evaluation and refinement of vocational education programs ensure that students receive education aligned with the latest industry trends. Identifying key competencies and aligning programs with market demands ensures that graduates are well-prepared for the evolving job landscape, contributing to the nation's economic resilience. Fourth, building on recommendations outlined in documents like "The Future Image of Higher Education in Our Country (Recommendation)", issued by the Central Education Council in 2005,<sup>[26]</sup> there is a noticeable shift in Japan's higher education landscape since the early 2000s. The focus has increasingly shifted towards practical excellence in educators' qualifications, emphasizing specialized knowledge, skills, and a commitment to fostering practical competencies in students. This shift recognizes the evolving nature of professions and industries, where educators equipped with specialized knowledge play a crucial role in preparing students for the intricacies of the modern job market. Finally, the landscape of vocational education within higher education institutions in Japan is intricately connected to demographic shifts and societal needs. For example, while the population of 18-year-olds in Japan has decreased rapidly, the percentage of students advancing to higher education institutions remains substantial, totaling 80.0%. This includes 52.6% for universities, 4.7% for junior colleges, 0.9% for the fourth year of technical colleges, and 22.4% for specialized courses in vocational schools.<sup>[27]</sup>

### ***Professional and vocational universities: a new paradigm***

The landscape of higher education in Japan has witnessed a significant paradigm shift with the establishment of professional and vocational universities since 2019. This innovative approach, introduced through amendments to the School Education Act, signifies a pivotal development in Japan's commitment to addressing the evolving needs of the job market. Professional and vocational universities provide a unique opportunity for students to acquire both theoretical knowledge and practical skills essential for becoming professionals in specific fields.

These institutions operate within the existing university system, offering a mechanism that institutionalizes a focus on practical vocational education. The structure is designed to strengthen the training of specialized professional talent through close collaboration with industries. This not only enhances the practical education component but also expands the choices for individuals aspiring to pursue higher education.

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT),<sup>[28]</sup> regarding characteristics of professional and vocational universities, they distinguish themselves by implementing education content that fosters individuals with "high practical skills and rich creativity" in specific professional fields. The key features of their educational content include: First, it provides an extensive practical training. For example, over one-third of the required graduation credits are dedicated to practical training and hands-on skills development. Through abundant practical experiences, students acquire advanced "practical skills" crucial for their careers. Second, it takes a balanced approach to theory and practice. Instruction is delivered by both experts proficient in theoretical knowledge and experienced professionals from various industries in these universities and colleges. Third, relevant education and training are undertaken in small class sizes, typically fewer than 40 students, ensure personalized and interactive learning. Fourth, it stresses extended corporate internships, including prolonged practical internships within companies, lasting more than 600 hours (for four-year programs), allow students to experience real-world scenarios.

In terms of their structure, these universities and colleges ensure that students not only gain knowledge and technical expertise but also develop critical thinking skills for problem-solving. To illustrate, first, they emphasize cross-disciplinary learning for applied skills and encourages learning beyond a single specialization, fostering individuals capable of generating new ideas. Second, graduates are equipped to lead changes in the

industries and professions they enter. Third, graduates receive the degree of “Bachelor (professional)” for completing a professional and vocational university program. For those completing a program at a professional and vocational junior college, the degree awarded is associate (professional). These degrees enable graduates to pursue employment, further education in graduate schools, or international studies. Distinctive features of these universities and colleges include: First, there are education curriculum coordination councils in both professional universities and professional colleges. They centered around industry and community stakeholders and ensure the incorporation of the latest industry trends and community perspectives into the education curriculum. Second, while professional and vocational universities offer four-year programs, and professional and vocational junior colleges provide two- or three-year programs, flexibility is introduced with the option for bifurcated programs, allowing students to choose between initial and later stages of their studies. Third, regarding cumulative duration of study, these institutions recognize the value of practical experience, individuals entering professional and vocational universities with prior work experience have the option to include this in the cumulative study duration. Fourth, they actively accept students from various backgrounds, including high school graduates, working professionals, and transfer students. Selection criteria consider practical experience, qualifications, and achievements in skill assessments. Finally, accreditation evaluations for professional and vocational universities include specialized assessments tailored to the characteristics of each field.

Doubtlessly, the emergence of professional and vocational universities and junior colleges has not only augmented the array of choices for higher education but has also become a driving force in redefining the dynamics of vocational education. By addressing the industry’s demands, fostering graduates with a holistic skill set, and challenging the conventional academic-vocational divide, these institutions are pivotal in shaping the future workforce. Further, the establishment of this model challenges traditional perceptions of higher education and underscores the necessity for adaptability in the face of an ever-evolving job market. They stand as a testament to Japan’s dedication to excellence, adaptability, and the continuous evolution of its educational landscape.<sup>[29]</sup>

Based on the discussion above, Table 1 highlights the evolution of vocational education in Japan, from traditional pathways to the establishment of professional and vocational universities. It emphasizes key policies, initiatives, and characteristics of these institutions, showcasing Japan’s commitment to practical education and responsiveness to industry needs.

## CHALLENGES AND OPPORTUNITIES

As noted earlier, Japan’s higher education system, deeply rooted in academic tradition and guided by historical influences, is grappling with persistent challenges in effectively integrating vocational education. The positioning of vocational education within the higher education landscape remains ambiguous, leading to a conflict between societal expectations, diverse educational needs, and the aspiration for a unified system. This section discusses the challenges and opportunities arising from the ambiguity surrounding the role of vocational education in Japanese higher education.<sup>[30]</sup>

### ***Ambiguity in vocational educational positioning***

The ambiguity in defining high-quality vocational education, particularly in the level of tertiary education, has been a longstanding issue in Japan. According to Yoshimoto,<sup>[31]</sup> the debate surrounding the nature of vocational education at this level has lacked sufficient academic and policy discussions. This lack of clarity has manifested in several ways, contributing to challenges within the higher education system.

### ***Quality and relevance of vocational education***

In the realm of tertiary education in Japan, vocational education has been criticized for its weaknesses in terms of “quality and relevance” compared to international standards. In contrast to many foreign vocational education systems incorporate work-integrated learning to enhance the “quality” of education, for instance, Australia has successfully integrated vocational education methodologies even within university settings, Japan lacks clear regulations regarding the qualifications of educational staff and the training required for those participating in work-integrated learning. Moreover, while certain fields, such as nursing, adhere to high standards of vocational education, many areas lack consistent regulations beyond the basic requirements for each institution. The absence of comprehensive standards raises questions about the quality and consistency of vocational education across different sectors.

### ***Challenges in program governance and evaluation***

The larger issue concerning “policy and governance” becomes apparent when examining the education and training programs in the third stage of education. The lack of clear categorization and understanding of specialized fields in Japanese education hinders effective cross-sectoral communication. The existing classification in school surveys varies by school type, making it challenging to establish mutual understanding between

**Table 1: Changes in higher vocational education in Japan**

Period/year	Key policy/initiative/event	Characteristics/impacts
Pre-2011	Traditional demarcation between academic and vocational education  Vocational education focused on practical skills for specific trades	Separate pathways for academic and vocational pursuits
2011	Release of “Future of Career and Vocational Education in Schools”	Emphasis on collaboration between educational institutions and industries  Recognition of changing societal landscape and learner needs
2015	Panel of experts on “Practical Vocational Education in New Higher Education Institutions”	Recognition of diverse needs of young individuals amid declining corporate training functions  Call for establishment of new higher education institutions focused on practical vocational education
Post-2019	Establishment of professional and vocational universities	Institutionalization of focus on practical vocational education within existing university system  Structured to strengthen training of specialized professional talent through collaboration with industries  Expansion of choices for individuals aspiring to pursue higher education
Characteristics of professional and vocational universities	Extensive practical training (over one-third of credits dedicated to practical training)  Balanced approach to theory and practice  Extended corporate internships (over 600 hours)  Emphasis on critical thinking and problem-solving skills  Awarding of “Bachelor (professional)” or “Associate (professional)” degrees  Education curriculum coordination councils  Accreditation evaluations tailored to each field	-  Small class sizes for personalized learning  Cross-disciplinary learning for applied skills  Graduates equipped to lead changes in industries and professions  Recognition of prior work experience in cumulative study duration  Flexibility in program duration and entry criteria  Acceptance of students from various backgrounds

different sectors.

Further, one of the significant challenges in Japanese higher education is the absence of mechanisms to articulate and ensure the “quality” of vocational education. While the National Qualifications Framework (NQF) is a globally recognized system that acknowledges both academic and vocational programs, Japan’s lack of interest in adopting such frameworks hampers efforts to enhance the societal evaluation of vocational education. Compared to many countries, the Japanese government’s interest in NQF remains low, and efforts to bridge the gap in vocational education largely rely on the initiatives of educational institutions.<sup>[32]</sup> The lack of clear articulation mechanisms leads to uncertainties about the equivalence of vocational education qualifications with academic programs. Questions arise regarding the level of knowledge and skills acquired by professionals in various sectors and how these align with international standards. The absence of clear standards for vocational education programs poses challenges for ensuring the quality and relevance of education across different fields.

### **Challenges in the context of educational diversity**

Japan’s diverse higher education landscape, consisting of

nearly 800 institutions, introduces another layer of complexity in addressing challenges related to vocational education. First, the shift in societal expectations, particularly evident since the late 1990s, has led to increased demand for practical education within the higher education sector. Traditionally considered centers of academic excellence, universities in Japan struggled to adapt to the evolving expectations of students, parents, and the wider society. The expansion of university enrollment rates, while commendable, brought forth a challenge in delivering practical, industry-relevant education. Second, a distinctive characteristic of the Japanese higher education system is the perceived disconnection between university education and its relevance to the workplace. This disjunction became more pronounced as the Japanese-style employment system, characterized by lifelong employment in a single company, began to diminish in the late 20th century. The increased number of university graduates facing difficulties in securing employment that aligns with their academic qualifications underscored the need for a reevaluation of the role of higher education in preparing students for the workforce. Finally, the absence of clear articulation pathways for vocational education exacerbates the challenges faced by students who opt for limited-scope institutions. The potential dead-ends for learners in institutions that focus on specific vocational

areas without providing broader pathways for further education contribute to a fragmented higher education landscape.<sup>[33,34]</sup>

### **Opportunities amid challenges**

While challenges persist, there are opportunities to redefine the role of vocational education within the broader context of Japanese higher education. First, to address the challenges related to program governance and evaluation, fostering greater collaboration and dialogue between industries and educational institutions is essential. Establishing clear channels for communication can lead to a more nuanced understanding of the appropriateness of educational methods within specific fields. This collaboration can also contribute to the development of industry-relevant standards for vocational education. Second, to overcome the ambiguity in vocational education positioning, a concerted effort is needed to clarify the role of vocational education within the higher education landscape. This involves redefining the expectations placed on universities and vocational institutions, emphasizing the importance of both academic knowledge and practical skills. Third, efforts should be made to address challenges related to program articulation and quality assurance. Developing clear articulation pathways that allow students to transition seamlessly between different levels of education, including vocational and academic programs, can mitigate potential dead-ends in educational trajectories.<sup>[35-37]</sup>

Japan's higher education system stands at a crossroads, facing the challenges of defining the role of vocational education, addressing ambiguity in program governance, and navigating the complexities of a diverse educational landscape. While the challenges are significant, there are opportunities for reform and transformation. Enhanced industry collaboration, and a clearer articulation of the role of vocational education can contribute to building a more responsive and integrated higher education system. It requires a collective effort from policymakers, educational institutions, and industries to bridge the gap and ensure that Japanese higher education meets the evolving needs of students and the workforce in the 21st century.

## **DISCUSSION AND CONCLUSION**

### **Main findings**

This study embarked on a comprehensive exploration of vocational and technical education in Japan, focusing particularly on the recent transition of vocational education institutes to the higher education level and the establishment of the professional and vocational universities and colleges. The insights gained from this

endeavor are structured around three key research questions, each providing a lens into the evolving landscape of vocational education in the Japanese higher education context.

Our investigation into the first research question of impact of the recent shift to higher education, anchored in the works of Horai and Terada, unearthed a substantial shift from secondary to higher education in vocational and technical education. This departure from traditional boundaries goes beyond mere institutional restructuring; it signifies a profound transformation in the philosophy and expectations associated with vocational education in Japan. The shift reflects an evolving paradigm that recognizes the imperative of aligning vocational education with broader educational objectives and the dynamic demands of industries. This repositioning within higher education marks a pivotal juncture in the trajectory of vocational education, setting the stage for a more integrated and responsive educational ecosystem.

To respond to the second research question of alignment of the professional and vocational universities and colleges, we assessed these institutions in light of global trends outlined by Maclean and Pavlova,<sup>[14]</sup> Broek *et al.*,<sup>[15]</sup> and Teichler.<sup>[4]</sup> Our findings indicate that this professional and vocational university strategically aligns with the international trajectory favoring practical education within higher education. By emphasizing practical, industry-aligned education, it positions itself within the global discourse advocating for a seamless integration of theory and practice. Beyond the institutional sphere, this move signals a concerted effort to harmonize Japanese higher education with internationally recognized best practices. The implications extend beyond borders, presenting Japan as an active participant in the global conversation on the future of higher education.

Addressing the third research question of challenges and opportunities for practical education in Japanese universities uncovered the multifaceted challenges and opportunities inherent in providing practical education aligned with industry needs and conducive to lifelong learning. Governance issues, collaborative frameworks, and the dynamic nature of specialized fields emerged as challenges. However, amid these challenges, opportunities for innovative collaborations, responsive governance structures, and a transformative approach to education were identified. The delicate equilibrium between traditional academia and evolving industry demands presents an opportunity for Japanese universities to redefine their role as dynamic contributors to a workforce characterized by adaptability and continuous learning.



### **Implications**

Regarding implications for research, the revised exploration of these research questions calls for sustained scholarly attention to the ongoing shifts in vocational and technical education within the Japanese higher education landscape. Future research endeavors should delve into the longitudinal impacts of this transition on student outcomes, industry partnerships, and the overall responsiveness of higher education to evolving societal needs. Comparative studies with international models of practical education would provide valuable insights into effective practices and potential areas for improvement.

As for implications for policy, the nuanced understanding of the alignment of the professional and vocational universities and colleges with global trends suggests that policymakers should foster an environment encouraging similar initiatives. This entails the development of flexible accreditation frameworks, incentivizing industry collaboration, and providing avenues for international benchmarking. Policymakers must strive for a holistic approach that facilitates the seamless integration of practical education within the broader higher education system.

Concerning implications for institutional practice, institutional practices must reflect the recognition of the evolving landscape of vocational and technical education. The findings underscore the importance of industry collaboration, transparent governance structures, and an innovative approach to curriculum development. Universities, especially those embracing the specialized professional model, should actively seek industry input, establish advisory boards, and promote flexible structures that facilitate lifelong learning.

While the insights gleaned from this study offer valuable contributions, certain limitations warrant consideration. The reliance on existing literature and available data may not capture real-time nuances of ongoing developments. Additionally, the focus on the Japanese context may limit the generalizability of findings to other educational systems. The qualitative nature of the study, while providing in-depth exploration, may limit broader generalizations. Future research could address these limitations by incorporating longitudinal data, international comparative analyses, and a more extensive array of research methodologies.

### **Future research directions**

Based on the concluding remarks and discussion provided above the study presents potential future research directions, particularly focusing on empirical studies to validate findings and recommendations below.

First, empirical studies on impact of vocational

education shift to higher education could investigate the direct impacts of the recent shift of vocational education institutes to higher education in Japan. This research could involve longitudinal studies tracking student outcomes, job placements, and career trajectories of graduates from vocational education programs integrated into higher education. Surveys and interviews with stakeholders, including students, educators, and employers, can provide valuable insights into perceptions, challenges, and successes of this transition. Quantitative analyses can assess changes in enrollment patterns, graduation rates, and industry partnerships post-transition. Second, empirical research on evaluation of professional and vocational universities can evaluate the effectiveness of professional and vocational universities and colleges in Japan. Comparative studies can be conducted between graduates from these institutions and those from traditional universities or vocational schools to assess employability, skill acquisition, and career advancement. Surveys and focus groups with graduates, employers, and educators can gauge perceptions of the quality, relevance, and impact of education received at professional and vocational universities. Quantitative analyses can examine employment rates, earnings, and satisfaction levels among graduates from these institutions compared to others. Third, empirical studies on addressing challenges in vocational education governance and evaluation can delve into the governance structures and evaluation mechanisms of vocational education programs in Japan. Comparative analyses with international models can identify best practices and areas for improvement. Surveys and interviews with policymakers, administrators, and educators can assess the effectiveness of current governance frameworks and the challenges faced in program evaluation. Case studies of successful vocational education programs can provide insights into effective governance structures and evaluation methods. Quantitative analyses can assess correlations between governance practices, program quality, and student outcomes. Fourth, empirical research into enhancing collaboration between industries and educational institutions can explore strategies to foster greater collaboration and dialogue between industries and educational institutions in Japan. Case studies of successful industry-education partnerships can identify factors contributing to effective collaboration. Surveys and interviews with industry leaders, educators, and policymakers can assess perceptions, barriers, and facilitators of collaboration. Quantitative analyses can examine the impact of industry partnerships on program quality, student outcomes, and workforce development. Fifth, empirical studies on improving articulation pathways and quality assurance in vocational education can investigate mechanisms to enhance articulation pathways and quality assurance in vocational education programs in Japan. Longitudinal studies can track the

educational trajectories and career outcomes of students transitioning between vocational and academic programs. Surveys and focus groups with students, educators, and administrators can identify barriers to articulation and perceptions of program quality. Comparative analyses with international models can highlight effective approaches to articulation and quality assurance. Quantitative analyses can assess the impact of articulation pathways on student success and program quality. Finally, empirical research into exploring innovative educational practices in vocational education can explore innovative educational practices in vocational education programs in Japan. Case studies of innovative programs can identify promising practices and lessons learned. Surveys and interviews with educators, students, and industry partners can assess the effectiveness and feasibility of innovative approaches. Quantitative analyses can evaluate the impact of innovative practices on student outcomes, engagement, and satisfaction.

These empirical studies would provide valuable evidence to validate the findings and recommendations outlined in the study, contributing to a deeper understanding of the challenges and opportunities in higher vocational education in Japan and informing future policy and practice.

In conclusion, this exploration into the evolving landscape of vocational and technical education in Japan, marked by the recent shift to higher education and the establishment of the professional and vocational universities, reinforces the notion of navigating uncharted territory. The responses to the research questions reveal a transformative journey, altering traditional boundaries, aligning with global trends, and presenting both challenges and opportunities. As Japan charts this course, stakeholders must remain committed to ongoing evaluation, collaboration, and adaptability to realize the vision of a dynamic and industry-aligned higher education ecosystem. The commitment to excellence and responsiveness will be instrumental in navigating the complexities and potentialities of specialized professional education in Japan.

## DECLARATIONS

### Author contributions

Huang FT: Conceptualization, Writing—Original draft, Writing—Review and Editing.

### Source of funding

The article received no external funding.

### Ethical approval

Not applicable.

## Conflict of interest

Futao Huang is an Associate Editor-in-Chief of the journal. The article was subject to the journal's standard procedures, with peer review handled independently of the member and his research group.

## Data availability statement

No additional data.

## REFERENCES

1. Central Education Council. [Building a New Future Toward a Qualitative Transformation of University Education~Toward a university that continues lifelong learning and fosters the ability to think independently (report)]. Accessed December 31, 2023. [https://www.mext.go.jp/component/b\\_menu/shingi/toushin/\\_\\_\\_icsFiles/afieldfile/2012/10/04/1325048\\_1.pdf](https://www.mext.go.jp/component/b_menu/shingi/toushin/___icsFiles/afieldfile/2012/10/04/1325048_1.pdf)
2. UNESCO. [Recommendation concerning Technical and Vocational Education and Training]. Accessed January 9, 2024. <https://unesdoc.unesco.org/ark:/48223/pf0000245178?posInSet=19&queryId=c11ec825-4030-4f75-989a-c26dfec156f0>
3. Dougherty SM, Lombardi AR. From vocational education to career readiness. *Rev Res Educ.* 2016;40(1):326-355.
4. Teichler U. Higher education and the world of work: Conceptual frameworks, comparative perspectives, empirical findings. In *Higher Education and the World of Work*. Brill; 2019.
5. Abe M, Kaneko M. [Higher education outside 'university'—International trends and challenges in Japan]. Research Institute for Higher Education of Hiroshima University. 1990.
6. Inenaga Y, Yoshimoto K. Teaching staff in non-university higher education in Japan: Career experience, competencies and identities. In: *Universities as Political Institutions*. Brill; 2020; 213-234.
7. Kawai H. Comparative study of vocational education in individual countries—Towards the true mutual approaches of general and vocational education. *Int J Hum Cult Stud.* 2016;26:121-128.
8. Terada M. The development and present situation of vocational and technical teachers' professions in Japan. In: Grollmann P, Rauner F, eds. *International perspectives on teachers and lecturers in technical and vocational education*. Springer; 2007: 159-184.
9. Yokoo T, Uesato M, Uesato K. Historical development and perspectives of technology and vocational education in Japan. In: *Creating Contexts for Learning in Technology Education: Proceedings of the 9th Biennial International Conference on Technology Education Research (TERC 2016) Proceedings of the 9th Biennial International Conference on Technology Education Research (TERC 2016)*. Design & Technology Association of Australia; 2016: 284-289.
10. Yoshimoto K. Higher education and the transition to work in Japan compared with Europe. In: Enders J, Fulton O, eds. *Higher Education in a Globalising World: International Trends and Mutual Observations A Festschrift in Honour of Ulrich Teichler*. Springer; 2002: 221-240.
11. Kaneko M. The formulation of professional and vocational universities: Background and challenges of a new institution type in Japan. *Japan labor issues.* 2019;3:30-42.
12. Inenaga Y. [Can the "New Higher Education Institutions" Take on Practical Vocational Education?]. *Aradia Bulletin.* 2019;No.597.
13. Cameron R, O'Hanlon-Rose T. Global skills and mobility challenges and possibilities for VET: A cross-border cross-sectoral case study. *Int J Train Res.* 2011;9(1-2):134-151.
14. MacLean R, Pavlova M. Vocationalization of secondary and higher education: pathways to the world of work. *Revisiting global trends in TVET: Reflections on theory and practice.* 2013: 40.
15. Broek S, Werquin P, Coles M, Buiskool BJ, Rathner M, Sediakina

- Rivière E. *The evaluation of the UNESCO thematic area TVET (Technical and Vocational Education and Training)*. UNESCO; 2015.
16. Sebola MP. The role of Technical Vocational Education and Training Colleges (TVET) in higher education teaching: a higher education provided at basic education standard. *EUREKA: Soc Humanit.* 2022;(1):50-57.
  17. MOE. Japan's modern education system. Accessed January 18, 2024. [https://www.mext.go.jp/b\\_menu/hakusho/html/others/detail/1317220.htm](https://www.mext.go.jp/b_menu/hakusho/html/others/detail/1317220.htm)
  18. Sawai M. Vocational training and vocational education in postwar Japan: An overview. *Jpn Res Bus Hist.* 2020;37:1-10.
  19. Huang F. Higher education from massification to universal access: A perspective from Japan. *High Educ.* 2012;63:257-270.
  20. NIC-Japan. Definition of higher education institution. Accessed January 18, 2024. <https://www.nicjp.niad.ac.jp/en/japanese-system/hei.html>
  21. Metzger C, Fujita H, Law SS, Zemsky R, Berset JE, Iannozzi M. Vocational training and education. In: *Learning through collaborative research*. Routledge; 2013: 86-132.
  22. Kim SS. The characteristics of Japanese vocational education and training system and its recent changes. *J Labour Economics.* 2003;26(2):61-95.
  23. Huang F. Challenges for higher education and research: A perspective from Japan. *Stud High Educ.* 2014;39(8):1428-1438.
  24. Central Education Council. [Future of career and vocational education in schools (report)]. Accessed January 13, 2024. [https://warp.ndl.go.jp/info:ndljp/pid/11402417/www.mext.go.jp/b\\_menu/shingi/chukyo/chukyo0/toushin/1301877.htm](https://warp.ndl.go.jp/info:ndljp/pid/11402417/www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1301877.htm)
  25. Central Education Council. Special Feature 1:Grand Design for Higher Education toward 2040. Accessed January 4, 2024 [https://www.mext.go.jp/b\\_menu/hakusho/html/hpab201801/detail/1420041\\_00004.htm](https://www.mext.go.jp/b_menu/hakusho/html/hpab201801/detail/1420041_00004.htm)
  26. Central Education Council. [The future image of Japanese higher education (recommendation)]. Accessed January 6, 2024. [https://www.mext.go.jp/b\\_menu/shingi/chukyo/chukyo0/toushin/05013101.htm](https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/05013101.htm)
  27. Huang F. Higher education development in Japan. In: Shin J, Postiglione G, Huang F, eds. *Mass Higher Education Development in East Asia*. Springer; 2015: 27-42.
  28. MEXT. [Institutionalization of professional universities, etc.] Accessed January 5, 2024. [www.mext.go.jp/content/20210331-mxt\\_senmon01-100001385\\_01.pdf](http://www.mext.go.jp/content/20210331-mxt_senmon01-100001385_01.pdf)
  29. McCormick K. Towards a lifelong learning society? The reform of continuing vocational education and training in Japan. *Comp Educ.* 1989;25(2):133-149.
  30. Ogawa K. The effectiveness of vocational secondary education on entry-level job outcomes in Japan: Safety net for low-educated youth in a vocationally weak educational system. *Jpn J Sociol.* 2023;1-20.
  31. Yoshimoto K. Feasibility and challenges on a national qualifications framework and permeability in education and training system in Japan. *Handbook of Comparative Studies on Community Colleges and Global Counterparts*. Springer; 2017; 1-19.
  32. Inage F. [Creation of professional universities and professional junior colleges - Diet debate on revision of the school education law]. *Legis Res.* 2017;392:21-33.
  33. Breaden J. *Articulating Asia in Japanese higher education: Policy, partnership and mobility*. Routledge; 2018.
  34. Eswein M. (Vocational) Education and Social Inequality as Japanese Society Makes the Transition to a “Global Society”. In: Pilz M, ed. *The future of Vocational Education and Training in a changing world*. Springer; 2012: 127-141.
  35. Terada M. Challenges of vocational education and career education in high schools in Japan-From the viewpoint of career-competency formation for transition. In: Pilz M, ed. *The future of vocational education and training in a changing world*. Springer; 2012: 96-112.
  36. McGrath S, Yamada S. Skills for development and vocational education and training: Current and emergent trends. *Int J Educ Dev.* 2023;102:102853.
  37. Tsuya NO. Educational attainment, first employment, and first marriage in Japan. *J Fam News.* 2023;0192513X231155594.