

“SPECIAL INVITE PAPER”

**DEVELOPMENT OF STRATEGIES FOR
INTERNATIONALISING CHINESE HIGHER VOCATIONAL
EDUCATION**

Qian Huang and Jisun Jung

The University of Hong Kong, Hong Kong

ABSTRACT

Although many studies have discussed the internationalization of higher education in China, few have addressed internationalization in the context of Chinese higher vocational education (HVE). This research examines the historical evolution of internationalization in Chinese HVE, analyses the current internationalization strategies deployed by HVE institutes in China, and compares these strategies with those implemented by Chinese research universities. The research is based on document analysis, including analysis of government policy documents, government statistics, and the websites of government agencies and HVE institutes. The results show that the internationalization of Chinese HVE is based on strong government-driven policies. The development of China's HVE sector was originally based on a combination of Western models and the demands of local industry. For example, the initial model of Chinese HVE was influenced by several Western models, such as the German dual-track model, the Australian technical and further education model, and the British apprenticeship model. In the process of internationalization, Chinese HVE institutes have since implemented various additional initiatives, such as using English as the medium of instruction, recruiting international students, organizing exchange internationalization with overseas institutes and student internships in multinational companies, establishing branch campuses, and developing curriculums to meet the requirements of international qualification frameworks. These strategies differ from those implemented by research universities in terms of their emphasis on industry collaboration, regional economic development, and local labor market demands. Based on these findings, the study makes policy recommendations for the internationalization of HVE institutes and explores its implications for the local economy.

Keywords: Internationalization of higher education, Chinese Higher Vocational Education

Introduction

With the globalization of the economy over the last three to four decades, the labor market has also become global, and workforce mobility across national boundaries has reached an unprecedented high. Accompanying these changes, the internationalization of higher vocational education (HVE) has become an important issue worldwide, and HVE institutes are required to respond to the new and rapidly changing demands of global industries and labor markets. As the number of international students in the vocational education sector increases, institutes must find new teaching and learning approaches to meet the needs of students from different national backgrounds. HVE institutes also need to enhance their reputation and gain a competitive advantage in the global marketplace (Brown *et al.*, 2012; Tran & Dempsey, 2017). Accordingly, they have implemented various internationalization strategies, such as borrowing education systems wholesale, introducing foreign curriculums or innovative pedagogies, and developing exchange internationalization for academics and students. The process of internationalization has shifted from government-driven to institution-driven.

HVE in China has rapidly expanded. In 1998, there were 101 HVE institutes, with 148,600 students, whereas in 2017, there were 1,388 HVE institutes, with 11,049,500 students¹. In recent years, the internationalization of China's HVE has also accelerated. The number of full-time international students increased from 7,000 in 2016² to 17,000 in 2018³. By 2017, China had established 960 joint HVE schools and internationalization with 28 countries and regions⁴. By 2018, 33 overseas branch campuses had been established by Chinese HVE institutes⁵. In addition, the Luban Workshop program, which aims to provide young people with vocational skills and share the Chinese HVE experience with other countries, was set up in 2012. The program has already been implemented in Thailand, the UK, Indonesia, India, Pakistan, and Cambodia, and the government began organizing 10 more workshops in African countries in 2018. Despite the rapid expansion of the HVE sector and its active participation in recent internationalization activities, there is little research on the main actors of changes, what strengths and weaknesses they have, and how the policies have evolved – most studies about internationalization have focused on research universities.

HVE makes a particularly important contribution to national economic development, as its goal is to train a skilled labor force for key industries. HVE institutes seek to provide practical training with a flexible curriculum (Tran, 2012). In particular, HVE is expected to improve the connection between education and the labor market (World Bank, 2012; Postiglione & Tang,

¹ http://www.sohu.com/a/270207964_164989.

² 2017 Annual Report on Technical and Vocational Higher Education in China.

³ 2019 Annual Report on Technical and Vocational Higher Education in China.

⁴ 2018 Annual Report on Technical and Vocational Higher Education in China.

⁵ 2019 Annual Report on Technical and Vocational Higher Education in China.

2019). This is particularly important in China, whose modern economic growth has been led by manufacturing exports (Ford, 2015). Therefore, this study examines the historical evolution of internationalization in Chinese HVE, analyses the current internationalization strategies used by China's HVE institutes, and compares these strategies with those deployed by Chinese research universities. The research questions are as follows. How have the internationalization policies used by Chinese HVEs developed since 1980? What are the main characteristics of the strategies pursued by Chinese HVE institutes and research universities, and how do they differ?

Shaw et al. (2016) highlighted that HVE policies tended to be part of national agendas rather than institutionally driven strategies. The centralized policies have efficiently operated for a long time in a planned economic structure due to the close link between the government, industry, and HVE institutions; however, the recent open economic policy and diversified institutional structures require individual institutions to be more active and creative when building their strategies. Thus, in recent years, it has become increasingly important for institutions to develop strategies to enhance the quality of their internationalization and respond to the demands of global industries and labor markets. The findings of this study indicate policy recommendations for Chinese HVE institutes on positioning themselves in the global knowledge economy and realizing a national strategy, especially in the manufacturing field, while simultaneously developing their strategies for global competitiveness and program diversification.

The study also has social implications. For instance, it indicates the need to strengthen industry-school relations, promote education quality and establish internships in the process of HVE internationalization to contribute to local society.

Literature Review

1) Internationalization of Chinese Higher Education

After it acceded to the World Trade Organization (WTO) in 2001, China experienced economic globalization in various dimensions. This led to a broad range of social and economic changes, such as economic liberalization, a shift from farming to manufacturing as the country's main industry, migration from rural to urban areas, and the strengthening of the private sector (Shan & Guo, 2016). Globalization in higher education has been defined as 'the broad economic, technological, and scientific trends that directly affect higher education' (Altbach, 2004, p. 5). These trends include an increase in both cooperation and competition on an international scale (Postiglione, 2016). Internationalization in higher education has been defined as the 'specific policies and internationalization undertaken by governments, academic systems and institutions, and even individual departments or institutions to cope with or exploit globalization' (Altbach, 2004, p. 6). The internationalization of higher education institutes covers teaching, research, and administration (Knight, 2002). Further refining this concept, Knight (2008) argued that the

internationalization of higher education consists of internationalization at home and cross-border education.

The history of the internationalization of China's universities was thoroughly reviewed by Hayhoe (1996) and Yang (2002, 2014). They explained that the modern Chinese higher education system was originally based on the Japanese model of higher education and subsequently influenced by the Soviet and American models. Although China's modern higher education system has been strongly influenced by Western and other imported models, it has developed considerably and made significant achievements over the last three to four decades. Today, aspects of the Chinese higher education system are exported to many other developing countries, with the input of substantial resources by the Chinese government. The exportation and thus internationalization of Chinese higher education, such as through the Confucius Institute, manifest China's soft power (Yang, 2012; Wu, 2019). Based on 17 university cases in Guangzhou, Yang (2002) elaborated on the various internationalization strategies deployed by Chinese universities, which include student and faculty exchange, curriculum internationalization, research collaboration, the arrangement of international conferences, cooperation agreements, and the establishment of transnational institutes.

Studies have explored internationalization in Chinese higher education from several perspectives. First, some have explored the bilateral relationships formed between China and other countries in the process of internationalizing higher education, such as China's connections with the Association of Southeast Asian Nations (Welch, 2012), Singaporean universities (Welch, 2015), universities in the former Soviet Union, universities in Africa (Li, 2017) and Canadian universities (Hayhoe *et al.*, 2016). Other studies in this category have examined various types of cross-border higher education collaboration (Huang, 2003; Mok & Xu, 2008; Yang, 2008). Wu (2019) emphasized the shift in China's higher education sector from importation to exportation and described its internationalization strategy as 'outward-oriented (p. 81-82). Current examples of this outward-oriented strategy are not difficult to find; they include the Confucius Institute, the provision of aid by higher education institutes to undeveloped areas, and the recruitment of international students to China's higher education sector. Second, studies have taken an institutional perspective on policy issues related to the internationalization of Chinese higher education, such as the use of English as the medium of instruction (Yang, 2002; Zhang 2018). Studies in the third category are the most prolific. They have focused on students' experiences, such as the global competency of undergraduate students at Chinese universities (Meng *et al.*, 2017) and the experiences and cultural adaptation of international students at Chinese universities (Li, 2015; Chiang, 2015; Ding, 2016).

Internationalization has become a key policy for many research universities in China, and they have introduced several approaches to demonstrate their international engagements, such as transnational and exchange internationalization for students and academics, upgrading curricula,

and collaborative research (Zha, 2019). For most research universities, internationalization was the main strategic tool to improve their visibility and reputation in globalized higher education as world-class universities. The government-led reform policies were the main drivers for internationalization in those institutions, although the detailed approach was different from those in HVE institutes. For example, the main goal of the internationalization of research universities was to recruit talented academics executing high-profile research and encourage them to be more engaged in world-class research activities (Altbach & Knight, 2007). Those policies were efficient to increase the rankings of Chinese research universities in a short period, as many league table indicators demonstrate (Allen, 2019).

However, those top-down approaches raised concerns in recent years regarding conflicts between stakeholders in higher education, reliance on quantitative performance indicators, neglect of educational quality, disadvantages of certain academic fields, and coordinating Chinese characteristics with global discourse (Allen, 2019; Song, 2018). This is particularly important today because many Chinese universities have interests beyond being responsive to government initiatives and reform policies. Previous studies have demonstrated the barriers to the implementation of internationalization plans among research universities, such as diversified understanding of the goals and strategies among stakeholders or lack of staff and student engagement (Jin et al., 2020). Zha's (2019) study pointed out that the Chinese government invested a significant amount of resources in internationalization in higher education for political and economic purposes; however, those approaches possibly weakened the potential for innovation and approaches at the local and institutional levels of development. These experiences and reflections provide several implications for fulfilling the internationalization of HVE institutions in China.

Despite the increasing importance of HVE in China and the emergence of new approaches to the internationalization of the sector, insufficient attention has been paid to how Chinese higher vocational institutes have been internationalized historically and what their current status is. Most studies of the internationalization of higher education have focused on research universities, not vocational institutes. In addition, little is known about how government policy and university strategies interact to respond to the demands of global and local industries and labor markets. Thus, this research explores the internationalization strategies implemented by China's HVE institutes in comparison with those of China's research universities.

2) China's Higher Vocational Education

In China, as shown in Figure 1, after completing 9 years of compulsory education in primary school and junior high school, students take a final examination. Those with sufficiently high scores enroll in senior high schools; those who do not meet the entrance requirements for senior high schools attend vocational schools at the secondary level. In 2017, the percentage of

enrolment in senior high schools and vocational schools was 51.9% and 42.1%, respectively, at the national level (Wang & Liu, 2018).

As also shown in Figure 1, graduates of senior high schools enroll in universities or higher vocational institutes, depending on their *Gaokao* (National College Entrance Examination) scores. The rate of enrolment of senior high school graduates in Bachelor's degree internationalization differs between geographical regions of China. For instance, enrolment in Tianjin city is 79.43%, that in Beijing is 68.91%, and that in Sichuan province is 30.89%.⁶ Those whose *Gaokao* scores do not meet the entrance requirements for Bachelor's internationalization go to higher vocational institutes. In 2018, taking Guangdong province, for example⁷, 23.01 % of students attending secondary vocational schools enroll in higher vocational institutes. The remainder enters the workforce directly. They are not eligible to take the *Gaokao* examination for university entrance, because they hold vocational rather than academic qualifications at the secondary level (*Zhong Zhuan*). However, they have the opportunity to pursue self-study to gain a higher vocational degree (*Da Zhuan*) first and then go to university to obtain a Bachelor's degree.

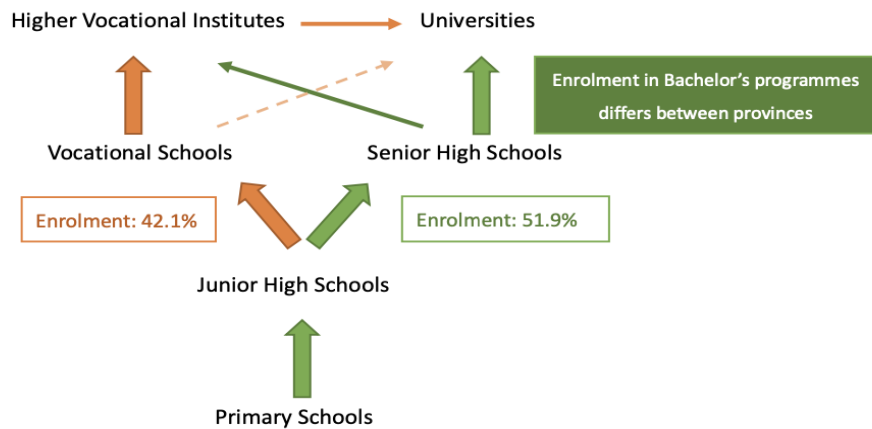


Figure 1: China's education system and relevant statistics in 2017 (Wang & Liu, 2018)

Vocational education in China is strongly influenced by economic conditions and industrial structures. In particular, in the era of Industry 4.0, employers in various industries have repeatedly raised concerns as to whether the country's existing vocational education meets new demands for skills (Postiglione, 2016). Researchers have noted that the massification of China's higher education has not solved the problem of the skills gap (Bai, 2016). After the global financial crisis in 2008-2009, the Chinese government recognized the need to move away from

⁶ https://www.sohu.com/a/336172077_623714

⁷ <http://www.zhjedu.cn/Article/d6260bb8-216b-4e12-aa4c-c4b3e877e666.shtml>

exports as the basis of its economy. Instead, therefore, it sought to foster a highly motivated workforce and improve workers' job-related skills (Chan, 2015). HVE was expected to play a central role in reducing the skills gap in industries and labor markets. In today's era of globalization, China has decided to shift its strategy from 'made in China' to 'invented and designed in China'⁸. The central aims of this policy are to provide higher-value industrial goods and services and to strongly promote innovation. The role of HVE has become increasingly important with these policy changes, as more and more skilled workers must be trained for China's export-oriented manufacturing industry (Ren, 2018).

As Tran and Dempsey (2017) pointed out, different countries have taken different approaches to the internationalization of higher vocational education. For example, HVE institutes in English-speaking countries have focused on commercializing education and generating revenue by recruiting more international students, whereas institutions in Asia have tended to use HVE institutes as a tool for developing a qualified workforce for the local labor market.

Methodology

Table 1: Forms of documents analyzed

Source	Documents	Data
Government websites	Website of Ministry of Education, China (http://www.moe.gov.cn) Information Platform of Chinese-Foreign Cooperation in Running Schools (http://www.crs.jsj.edu.cn)	Statistics: number of institutions, internationalization, and students; enrolment rate. Several joint schools and internationalization with overseas institutes.
Government publications	<i>Annual Quality Reports of China's Higher Vocational Education</i> , edited by the Shanghai Academy of Educational Sciences and MyCOS Institute. [Dec 2015; July 2016; July 2017; July 2018; June 2019] <i>Theory and Practices: Modern Apprenticeship in Guangdong</i> , edited by the Education Bureau of Guangdong Province and Education Research Institute of Guangdong Province. [May 2017]	Key national policies on vocational schools Guangdong province case study: UK apprenticeship model, school-industry collaboration.
Official websites of HVE institutes	Ranking of the top 50 most internationalized HVE institutes published in the <i>Annual Quality Reports on China's Higher Vocational Education</i> . [July 2017; July 2018; June 2019]	Internationalization-related activities/events: exchange programs, adoption of English curriculums, overseas internships, double degree programs, recruitment of international students, foreign delegation reception, Luban Workshop program abroad.

⁸ http://www.chinadaily.com.cn/opinion/2013-10/10/content_17019260.htm.

This research is based on document analysis. Documents serve as a valuable resource for researchers exploring social phenomena (Goodson & Sikes, 2001). Unlike interviews and observations, document analysis provides a platform for exploring history (Olson, 2010). By definition, documents exist before document analysis is conducted, and the data they contain take many forms (Miller & Alvarado, 2005). Archival documents record formal communication in society (Atkinson & Coffey, 1997). Scot (1990) illustrated four key criteria that must be met to ensure the quality of document analysis, namely authenticity (relating to the author(s) of the document, why it was written, and whether it is based on first-hand materials), credibility (whether its content is reliable and correct), typicality (whether its content is representative and generalizable) and meaning (intended meaning, received meaning and internal consistency of meaning). The documents reviewed for this research are categorized in Table 1.

All collected and analyzed documents were publicly available in text format as books or website information, and there were no confidentiality issues. As most of the documents above were originally written in Chinese, the key information subject to data analysis was translated into English. To improve the reliability of the translation, the researcher cross-checked the translation with two other researchers who could read both Chinese and English. The names of specific HVE institutes were translated according to the names shown on their official websites. In translation, some of these names may appear to denote universities or technical colleges, but in Chinese, they belong to higher vocational institutes. The websites and publications listed above were issued or compiled by the government and are annually updated by the government.

There are three possible approaches to document analysis: 1) analyzing the content of documents, 2) analyzing documents as commentary in context, and 3) analyzing documents as actors in context (Miller & Alvarado, 2005). In this study, all three approaches were used.

First, all of the relevant documents were collected and filed. To ensure the comprehensiveness of the analysis (Jordanova, 2000), a broad range of documents was selected. The selected documents included government policies and regulations at national and provincial levels, annual statistics, yearbooks and institutional rankings published by the government, and documents reporting on news and events at HVE institutes. They were selected from library resources and using an online search engine. As Howell and Prevenier (2001) noted, researchers must purposefully select documents that contain information relevant to the aim of the research. Therefore, only relevant documents were chosen for this study, and they were re-organized by theme and timeline. Third, the history of HVE was summarised, reviewed, interpreted and cross-checked using multiple sources of data. Third, the main activities of China's HVE institutes were identified from the institutes' official websites and then compared to find common themes across the cases. The main activities listed in news and events reports on the websites of the selected HVE institutes (either in Chinese or in English) were summarised. The activities were listed and categorized in one Excel file. The categories of internationalization activities included

receiving foreign delegations, outbound visits, student/staff exchange programs, double degree programs, school-industry internships, overseas internships, international conferences, international publications, and Belt and Road activities.

Researchers conducting document analysis must consider certain aspects of the social context (Finnegan, 1996). In this study, our interpretation was qualitative, enabling us to obtain an in-depth understanding of the phenomena (Patton, 2002). When analyzing the documents, both content and context were considered (Atkinson *et al.*, 2001).

Content analysis was performed by listing and reviewing all of the statistics, regulations, and policies; context analysis was conducted by cross-checking certain policies and their major purposes on a specific timeline. To ensure the reliability of the study, key terms and concepts were reviewed, discussed, and cross-checked by the researchers. The policies and regulations issued by the government and their implementation by institutes were also cross-checked.

Findings

1) History of internationalization of China's HVE

To answer the first research question, 'how have the internationalization policies used by Chinese HVEs developed since 1980?', policy documents were analyzed, and the main findings are organized in chronological order. In particular, the implications of key policies for stakeholders in higher vocational education were discussed.

The internationalization of China's HVE was analyzed in three phases by Wang (2016). Phase I ran from 1978, when China launched its reform and opening-up policy, to 1985. During this phase, China received financial support from the World Bank and technical aid from the German government. Phase II ran from 1986 to 2000, during which China received support from Germany, Australia, and the UK to establish vocational schools that provided teacher training, designed their curriculums, and offered international qualifications. Phase III began with China's accession to the WTO in 2001 and is ongoing. During this phase, more and more joint programs and joint schools have gradually been set up and various internationalization strategies implemented. Table 2 outlines the historical development of the internationalization of Chinese HVE.

Table 2: History of internationalization of Chinese HVE

Time	Process of and Key Events in Chinese HVE Internalisation
Phase I	
1978	Opening-up policy
1980	Minister of Education Nanxiang Jiang paid an official visit to Germany to discuss collaboration in the area

	of vocational education
1983	<ul style="list-style-type: none"> ● China's Ministry of Education led the first joint project between China and Germany in 1983 – the Nanjing Vocational & Technical Education Center on Architecture, jointly established by the Nanjing Education Bureau and Hanns Seidel Stiftung. ● From 1983, six cities in China (Suzhou, Wuxi, Changzhou, Shenyang, Shashi, and Wuhu) were used as pilot settings for the German dual-track system. ● Types of collaboration: bilateral visits, symposiums, and workshops, staff exchange (Chinese staff sent to learn in Germany; German experts invited to China to give lectures and consultations).
1985	In the mid-1980s, to promote HVE, China used US\$35 million from the World Bank to support the development of 17 vocational colleges.
Phase II	
1988	The German government provided volunteer aid for China to set up a central research center on vocational education and also two research centers in provinces.
Up to 1990	China received a US\$50 million loan from the World Bank under the China Vocational and Technical Education Project Loan Agreement, signed in 1990.
1991	From 1991 to 1996, the Sino-Canada Post-secondary Vocational & Technical Education Cooperative Program was carried out in 3 rounds, involving 29 vocational schools in China and 33 vocational schools in Canada.
1993	Jinling Vocational University cooperated with Australian universities to hold a double degree course, representing the first multinational segmental cooperative education project in the field of higher vocational education in China.
1994	<ul style="list-style-type: none"> ● The Chinese and German governments issued their first <i>Joint Statement by the Government of the People's Republic of China and the Government of the Federal Republic of Germany on Strengthening Cooperation in the Field of Vocational Education</i> in July 1994. Under the framework, the Sino-Germany Joint Group on Vocational Education was set up and engaged in five years of policy cooperation. ● The German government offered a bank loan to China to promote vocational education in Beijing, Shanghai, and Liaoning. ● From 1994 to 2000, The Vocational Skills Appraisal Center of the Ministry of Labor and Social Security and the British Cultural Commission carried out the 'China-UK Professional Qualification Certificate Cooperation Project' and established an international level vocational skill appraisal system aligned with professional competence standards.
1995	Issuance of <i>Interim Provisions on Sino-foreign Cooperation in Running Schools</i> .
1996	The World Bank provided a US\$30 million loan to support vocational education in Chin.
Phase III	
2000	China's entry into WTO
2002	In March 2002, the Sino-Australia (Chongqing) Vocational Education Program was launched – the largest-scale cooperation on vocational education and training between the Chinese and Australian governments. Australia invested AU\$19,420,000 and China invested the equivalent of AU\$5,300,000 to support five vocational schools in Chongqing city from 2002 to 2007. This program is still ongoing.
2006	In 2006, China's Ministry of Education introduced the country's first vocational education curriculum involving a world-famous enterprise: Toyota Motor Corporation's Technical Education for Automotive Mastery in the 21st Century.
2009	The Ministry of Finance and OPEC Foundation for International Development signed the Yunan Vocational Education Program Loan Agreement to support four higher vocational colleges in Yunan. The total

	investment was RMB492 million.
2013	Ningbo TAFE College entered into collaboration with its Australian counterparts.
2015	<ul style="list-style-type: none"> ● The Ministry of Education introduced a <i>Higher Vocational Education Innovation Development Action Plan</i> (2015-2018), which clearly stated that vocational education in China should provide significant support for and engage in close collaboration with Belt and Road countries. ● Joint development of courses with overseas high-level institutions; establishment of the professional, laboratory, or training bases; establishment of cooperative relationships such as teacher exchanges, student exchanges, and mutual recognition of credits; and high-level Sino-foreign cooperative education projects and institutions. ● Promotion of the internationalization of the National Vocational College Skills Competition. ● Sino-German Alliance for Higher Vocational Education was initiated and set up by 18 institutes from China and Germany.
2016	<ul style="list-style-type: none"> ● Ranking of the top 50 most internationally influential higher vocational institutes. ● Tianjin set up China's first Luban Workshop in Thailand.
2018	China began setting up 10 Luban Workshops in Africa.
2019	<ul style="list-style-type: none"> ● China's first Luban Workshop on Chinese medicine was set up in Switzerland ● Sino-Germany Alliance for Enterprises and Vocational Education was set up in Germany as NGO to promote school-industry collaboration in vocational education.

We identified three main aspects of the history of the internationalization of HVE in China. First, the internationalization process has been driven by strong government policies, with the involvement of many stakeholders, such as the Ministry of Education, the Ministry of Finance, and provincial governments, all of which play key roles in implementing the policies. As the workforce demand grew after the launch of the reform and opening-up policy in 1978, Chinese governments actively sought to gain experience of vocational education from German models through bilateral agreements with the German government. The resulting inter-government programs were implemented from the top-down as a national strategy. Second, the internationalization of HVE institutes shifted from a government-dominated approach to a more balanced approach led by both governments and institutes, and then to an institutionally driven approach. For example, before 2000, most policies were government-initiated, but after 2000, more institute-initiated activities were conducted, such as exchange programs with overseas institutes, jointly developed curriculums, the mutual recognition of credits, and the establishment of Sino-foreign institutes. Third, China started to export its successful policies and experiences to Belt and Road countries after years of borrowing policies from developed countries such as Germany, the UK, Australia, and Canada. Chinese companies started to set up branches in Belt and Road countries to improve the local economy, increasing the demand for skilled local workers. Exporting China's vocational education helps Chinese companies to train local workers to create high-quality local workforces. Fourth, the internationalization of HVE institutes involves the cultivation of qualified workers to assist in the internationalization of the whole country – for instance, to meet the need of multinational companies with foreign direct investment.

Policy strategies for the internationalization of HVE have become more dynamic in recent years. For example, the *Action Plan on Higher Vocational Education Innovation and Development (2015-2018)*⁹, released in October 2015, indicated the need to attract excellent resources from abroad through joint schools, programs, and curriculums. The *Implementation Plan of National Vocational Education Reform*,¹⁰ released in February 2019, encouraged HVE institutes in China to learn from German, Japanese and Swiss models in setting up innovative practical bases for vocational students. The *China Education Modernization 2035 Plan*¹¹ was released in February 2019 to promote the Luban Workshop program overseas. In the *Innovative Development of Higher Vocational Education Action Plan (2015-2018)* issued by the Ministry of Education¹² in 2015, the government promoted international collaboration in various dimensions, such as strengthening policy dialogue with developed countries, exploring potential channels and policies for supporting vocational education in developing countries, actively participating in the development of international criteria and regulations for vocational education, developing internationally recognized curriculums, helping HVE institutes to set up branch campuses abroad to train local workers and gaining a competitive advantage in the global skills marketplace.

Last, in recent years, the internationalization of HVE in China has emphasized frameworks for excellence and encouraged competition between institutions. For example, the 2019 *Annual Quality Report of China's Higher Vocational Education* ranked the top 50 most internationally influential HVE institutes since 2016. The report identified the eight main criteria used to select these top 50 institutes, as follows: the number of full-time international students (studying for more than one year), the number of part-time or short-term international students, the number of students engaging in internships in companies abroad, the number of teachers supervising and conducting training abroad, the number of teachers who are fellows of international organizations, the number of internationally recognized teaching criteria developed by teachers, the number of internationally recognized curriculum criteria developed by teachers and the number of awards received in international skills competitions. For example, Figure 2 shows the number of joint programs established in each province. At the top of the list are Jiangsu, Zhejiang, Shandong, and Shanghai, which also rank among the top 10 Chinese provinces in terms of GDP¹³ and volume of international trade¹⁴. Remote and impoverished areas of China have few joint HVE programs. This demonstrates the close link between local economic conditions and the development and dynamic internationalization of HVE.

⁹ http://www.moe.gov.cn/srcsite/A07/moe_737/s3876_cxfz/201511/t20151102_216985.html

¹⁰ http://www.gov.cn/zhengce/content/2019-02/13/content_5365341.htm.

¹¹ http://www.gov.cn/zhengce/2019-02/23/content_5367987.htm.

¹² http://www.moe.gov.cn/srcsite/A07/moe_737/s3876_cxfz/201511/t20151102_216985.html.

¹³ <http://finance.people.com.cn/n1/2020/0124/c1004-31561663.html>.

¹⁴ <http://news.hexun.com/2018-08-20/193835387.html>.

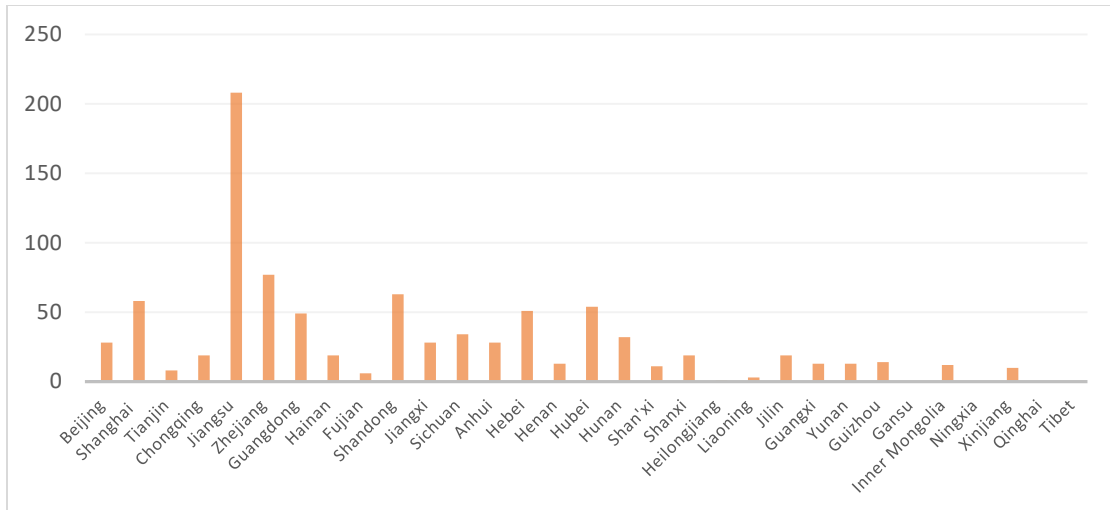


Figure 2: Number of joint programs offered by HVE institutes in China¹⁵

In summary, the internationalization of Chinese HVEs has been developed by multiple stakeholders, including the government, institutions, and industry. Initially, it was to meet the market demands after amending economic policies; however, it gradually has been broadened to include educational and training purposes. In this process, policy borrowing from European countries and Australia had a key role in shaping Chinese policies, and China has been able to export its systems to developing countries today. It is also notable that recent policies strongly emphasize the quality assurance of internationalization policies in HVEs.

2) *Features of internationalization of Chinese HVE*

Through analysis of past and current policies, this study identified the main characteristics of the internationalization strategies deployed by HVE institutes in China, specifically, the main actors in policy implementation, the influential international partners and the policies that were transferred, and the industry’s role in the internationalization process.

First, most of these strategies have been government-led/-initiated at the national level due to the demand for industrial upgrading and the need to fill the skills gap in China’s socialist market. HVE is a regional and applied form of higher education, whose main task is to nurture high-skilled talents and their contribution to the regional economy (Reng, 2018). The internationalization strategies of HVE institutes differ from those of research universities in a few respects, such as their starting point. ‘Rather than starting from student international mobility, [HVE internalization] starts from participating in governmental projects’ (Wang, 2016, p. 50). The internationalization of China’s HVE has gone ‘hand in hand’ with China’s opening-up policy (Huang, 2010).

¹⁵ Annual Quality Report of China’s Higher Vocational Education (2019).

Second, HVE institutes pursuing internationalization have learned from overseas experiences, such as by importing apprenticeship systems from Germany, Australia, and the UK. After the launch of its opening-up reforms in 1978, China experienced a huge demand for applied and technical talents. Germany has been a long-term partner in this area. The first Sino-Germany HVE project was initiated by the Chinese and German governments in 1983, and the project has since been upgraded to its current form, the Nanjing HVE Institute (Wang, 2016). The Chinese government has taken an active part in this process. For example, China's Ministry of Education selected six cities as pilot settings for the German dual-track system (Wang, 2016). According to the central government website, from 1978 to 2008, Germany helped China to train approximately 2,000 vocational education teachers and 700 principals.¹⁶ According to the website of the Tianjin Sino-German University of Applied Sciences (established in 1985 by China and Germany as a vocational school and renamed the University of Applied Sciences in 2009)¹⁷, Germany provided China with DM25 million and technical aid to set up the Sino-German Center for Technician Training. International collaboration has become more formal in recent years; for example, international qualifications are officially provided by many HVE institutes today, enhancing the credibility of collaboration.

Australia is another of China's key partners, having launched several exchange programs with Chinese institutes. According to the website of the Ministry of Education¹⁸, the Australia-China (Chongqing) Vocational Education and Training Project was established in 2002 as part of a cooperation phase that ended in 2007. Ningbo TAFE College was set up in 2013 in collaboration with Australian counterparts to implement Australia's technical and further education (TAFE) system in China. The Australian government invested nearly AU\$20 million and the Chinese government invested the equivalent of AU\$5.3 million to develop five vocational schools in Chongqing.

The UK is another collaborative partner. *Theory and Practices: Modern Apprenticeship in Guangdong* (2017) records the signing ceremony of the Agreement on Sino-British Vocational Education Modern Apprenticeship Pilot Program in Guangdong by the two governments in 2014. Zhongshan city was selected by the Ministry of Education as the first pilot setting for the UK's Modern Apprenticeship program.

Third, international industry-school collaboration plays a vital role in the internationalization of HVE institutes (Reng, 2018). For instance, the Guangzhou Institute of Technology has engaged in in-depth collaboration with the automobile company Scania AB (*Theory and Practices: Modern Apprenticeship in Guangdong*, 2017); Liuzhou Vocational and Technical College have implemented the German dual-track system in collaboration with ZF¹⁹, and Heilongjiang

¹⁶ http://www.gov.cn/ldhd/2009-11/29/content_1475934.htm.

¹⁷ <http://www.tsguas.edu.cn/xxgk/lsyg.htm>

¹⁸ http://old.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe_351/200408/3546.html.

¹⁹ http://www.lzzy.net/xwzx/xww/xyyw/content_8016.

Polytechnic collaborates with Walmart on apprenticeship provision²⁰. In the Sino-German Automotive Vocational Education Project, Volkswagen²¹ has been providing apprenticeships in China's vocational institute since 2011.

To sum up, the analysis revealed that the government-led policies successfully assisted in fulfilling national economic goals and industrial upgrading, and the learning experiences from international partners did significant roles in the development process, i.e. Germany's dual-track system, Australia's TAFE system, and UK apprenticeship system). Recently, industry-school collaboration has become more important in nurturing the future workforce in the globalized job market.

3) *Differences between internationalization strategies of China's HVE institutes and research universities*

This study examined the major internationalization strategies used by Chinese HVE and research institutes and found clear differences between the two. The study focused on how two types of institutions, HVE, and research universities, have developed their internationalization strategies and what the implications are for both sectors.

Table 3: Differences and similarities between internationalization strategies of Chinese HVE institutes and research universities

	HVE Institutes	Research Universities
Starting point	Inter-government collaboration	Student/faculty exchange
Core	Apprenticeship system, industry-school collaboration	Academic/research exchange
Exportation	Luban Workshop program to train skilled local workers	Confucian Institute, which disseminates Chinese culture
Similarities	Led by the government; broad student/faculty exchange; recruitment of international students	

These differences were identified from relevant documents analyzed in terms of starting point, core emphasis, and exportation approach. Both HVE institutes and research universities implement internationalization strategies involving broad student exchange opportunities, international student recruitment, and faculty visits. However, as Table 3 shows, although the internationalization strategy of research universities in China starts by promoting cultural

²⁰ http://www.sohu.com/a/130106673_162758.

²¹ <http://reports.weforum.org/disrupting-unemployment/sino-german-automotive-vocational-education-project/>

exchange among students and faculty (Rhoads *et al.*, 2014), the internationalization of China's HVE starts with participation in inter-government projects. Whereas research universities strongly emphasize academic and research exchange, China's HVE institutes focus on apprenticeship systems, industry-school collaboration, and technical support from volunteers. The internationalization of China's HVE is closely related to governmental and national strategies for industrial upgrading and overcoming the skills gap in the socialist market economy. Although two sectors had similar approaches in developing internationalization policies based on government initiatives, they have different approaches to execution, such as what teaching and learning models they imported and what final programs they exported.

Conclusion

To conclude, the major findings of the study are summarised in this section, and the policy implications are as follow:

First, the internationalization of Chinese HVE has shifted from a reliance on international organizational support to Chinese government-driven policies and finally to policies initiated by HVE institutes. In the early 1980s, after China's opening up to the outside world, international organizations such as the World Bank began to help China develop its vocational education. Meanwhile, the Chinese government recognized the importance of nurturing a qualified workforce to cope with the rapid growth of the manufacturing industry and its various sectors. Accordingly, the Chinese government began to send delegations to Germany to learn from its dual-track vocational system. Policies were borrowed from Germany as part of a government-driven scheme to build China's vocational education system. Inter-government cooperation has become more and more common in the area of vocational education, and institutes have begun to apply for funding under inter-government programs. Since the early 2000s, HVE institutes have initiated various exchange programs, double degree programs, and internships with counterparts abroad, capitalizing on their advantages to pursue internationalization.

Second, the Chinese government started borrowing vocational education policies from Germany, Australia, and the UK in the 1980s, and this collaboration continues today. Since 2015, however, the Chinese government has also exported successful HEV policies to developing countries, particularly Belt and Road countries, and trained skilled local workers for employment in the overseas branches of Chinese institutes. In 2015, the Ministry of Education introduced its *Higher Vocational Education Innovation Development Action Plan (2015 – 2018)*, according to which China supports Belt and Road countries through its successful policies and experiences and helps these countries to build workforces. China also exports its vocational education internationally in the form of Luban Workshops, covering not only Belt and Road countries but also some developed countries. For example, Tianjin held the first Luban Workshop in Thailand

in 2016. In 2018, China began organizing a further 10 Luban Workshops, including one on Chinese medicine in Switzerland.

Third, apprenticeships play a critical role in HVE and its internationalization. Students in HVE institutes engage in apprenticeships and internships in multinational companies in China or overseas companies set up by Chinese enterprises. Collaboration between HVE institutes and the industry is a distinctive feature of the internationalization of Chinese HVE. China's apprenticeship system is based on German, Australian, British and Canadian models, which stress the equal importance of learning at school and hands-on practice in the industry. As more and more Chinese companies are opening branches abroad, the Chinese apprenticeship system is also being exported overseas to train local people as branch employees.

Based on key findings, Suggestions for government policy makers, researchers, and HVE institutes relating to internationalization strategies are as follows. First, the future role of HVE in the era of Industry 4.0 needs to be discussed in-depth to establish an appropriate direction for its development. The rapid automation and robotization of the manufacturing industry will create a changing labor market for future graduates of HVE institutes in China. Therefore, training students with a focus on the demands of the local manufacturing industry might not be successful in the future. Instead, policy makers should identify the knowledge, skills, and competencies needed in both local and global industries, and determine how to fulfill these needs through HVE. In particular, as knowledge and skills in the manufacturing industry are rapidly updated, HVE institutes need to regularly upgrade their curriculums to meet the new demands placed on future graduates. Second, HVE institutes should work closely with local industry practitioners to jointly design and update their curriculums. Hands-on internship opportunities in relevant companies should also be embedded in HVE provisions. Third, HVE in China not only significantly contributes to the local economy but also represents a key sector of the country's higher education system. Its impact on teaching, learning, and research will help to shape the future development of this system. Studies should examine best practices in HVE teaching and learning, and policy makers, researchers, and institutional leaders should share HVE internationalization strategies and their results.

The main limitation of this research lies in its use of document analysis alone. More fieldwork, such as interviews and on-site observations, should be done in future studies. Future research could also explore the development of innovative pedagogical approaches to meet industry demands and their links with economic development.

Reference

- Allen, R. M. (2019). Commensuration of the globalized higher education sector: how university rankings act as a credential for world-class status in China, *Compare: A Journal of Comparative and International Education*, DOI: 10.1080/03057925.2019.1686607
- Altbach, P. (2004). Globalization and the university: Myths and realities in an unequal world. *Tertiary Education and Management*, 10(1), 3-25.
- Altbach, P. G., and J. Knight (2007). The Internationalization of Higher Education: Motivations and Realities. *Journal of Studies in International Education*, 11 (3-4): 290-305.
- Atkinson, P. and Coffey, A.(1997). Analyzing documentary realities. In D. Silverman (Ed.), *Qualitative research: Theory, method, and practice*. Thousand Oaks, CA: Sage.
- Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. (2001). Editorial introduction. In P. Atkinson, A. Coffey, S. Delamont, J. Lofland, & L.Lofland (Eds.), *Handbook of ethnography*. Thousand Oaks, CA: Sage
- Annual Quality Report of China's Higher Vocational Education (2019) edited by Shanghai Academy of Educational Sciences and MyCOS Institute, published by Higher Education Press
- Bai, L.M. (2016). Transitions from education to work: dilemmas and challenges of graduate unemployment, in *Guo, S.B. and Guo, Y (Eds.) Spotlight on China: Changes in education under China's market economy*, SensePublishers: Rotterdam, Netherlands.
- Brown, P., Lauder, H., & Ashton, D. (2012). *The global auction*. Oxford: Oxford University Press.
- Chan, J. (2015). *Is China creating a workforce with no soft skills?*
<https://www.britishcouncil.org/voices-magazine/china-creating-workforce-no-soft-skills>
- Chiang, S. (2015). Cultural Adaptation as a Sense-Making Experience: International Students in China. *Journal of International Migration and Integration*, 16(2), 397-413.
- Ding, X. (2016). Exploring the Experiences of International Students in China. *Journal of Studies in International Education*, 20(4), 319-338.
- Goodson, I.F., & Sikes, P. J. (2001). *Life history research in educational settings: Learning from lives*. Milton Keynes, United Kingdom: Open University Press.
- Finnegan, R. (1996). Using documents. In R. Sapsford & V. Jupp (Eds.). *Data collection and analysis*. Thousand Oaks, CA: Sage
- Ford, M. (2015). *Rise of the Robots: Technology and the threat of a jobless future*. Basic Books: New York.
- Hayhoe, R. (1996). *China's universities, 1895-1995: A century of cultural conflict* (Garland reference library of social science; v. 997). New York: Garland Pub.

- Hayhoe, R., Pan, J., & Zha, Q. (2016). *Canadian universities in China's transformation: An untold story*. Montreal; Kingston; London; Chicago: McGill-Queen's University Press.
- Howell, M. & Prevenier, W. (2001). *From reliable sources: an introduction to historical methods*. Ithaca, NY: Cornell University
- Huang, F. (2003). Transnational higher education: A perspective from China. *Higher Education Research and Development*, 22, 193-203.
- Huang, H. (2010). *Research on the international exchange and collaboration of China's Higher Vocational Education (Woguo Gaozhi Yuanxiao Guoji Jiaoliu yu Hezuo Yanjiu)*, Ph.D. Thesis, in Chinese
- Jin, W., Wen, J., & Zhou, M. (2020). What hindered the implementation of the university internationalization plan? case study of a top research university in China. *Globalization, Societies, and Education*, 18(1), 66-78.
- Jordanova, L. (2000). *History in practice*. London: Arnold
- Knight, J. (2002). Trade-in higher education services: the implications of GATS. The Observatory on Borderless Higher Education (Report).
- Knight, J. (2008). The internationalization of higher education: Are we on the right track? *Academic Matters: The Journal of Higher Education*, 5–9. Retrieved from <https://academicmatters.ca/the-internationalization-of-higher-education-are-we-on-the-right-track/>
- Li, J. (2017). Ideologies, strategies and higher education development: A comparison of China's university partnerships with the Soviet Union and Africa over space and time. *Comparative Education*, 53(2), 245-264.
- Li, X. (2015). International Students in China: Cross-Cultural Interaction, Integration, and Identity Construction. *Journal of Language, Identity & Education*, 14(4), 237-254.
- Meng, Q., Zhu, C., & Cao, C. (2017). An exploratory study of Chinese university undergraduates' global competence: effects of internationalization at home and motivation. *Higher Education Quarterly*, 71(2), 159-181 (in Chinese)
- Meng, F.D. & Rong, G.C. (2013). Cooperation between vocational colleges and multinational companies: reality and path. *Vocational and Technical Education*, No. 21, 39-41 (in Chinese)
- Miller, F., & Alvarado, K. (2005). Incorporating documents into qualitative nursing research. *Journal of Nursing Scholarship*, 37(4), 348-353.
- Mok, K., & Xu, X. (2008). When China opens to the world: a study of transnational higher education in Zhejiang, China. *Asia Pacific Education Review*, 9, 393-408.
- Olson, M. (2010). Document Analysis. 318-320.

- Patton, M.Q. (2002). *Qualitative research & evaluation methods* (3rd ed.), Thousand Oaks, CA: Sage
- Postiglione, G.A. (2016). Foreword in *Guo, S.B. and Guo, Y (Eds.) Spotlight on China: changes in education under China's market economy*, SensePublishers: Rotterdam, Netherlands.
- Postiglione, G.A. & Tang, M. (2019). International experience in TVET-industry cooperation for China's poorest province, *International Journal of Training Research*, Vol. 17, No. S1. 131-143
- Ren, J.Q (2018). *Research on the internationalization of Higher Vocational Education in Ningbo (Ningbo Gaodeng Zhiye Jiaoyu Guojihua Yanjiu)*, Zhejiang University Press: Hangzhou (in Chinese)
- Rhoads, R.A., Wang, X.Y., Shi, X.G and Chang, Y.C. (2014). *China's rising research universities: a new era of global ambition*, Johns Hopkins University Press: Baltimore, Maryland
- Scott, J. (1990). *A matter of record: documentary sources in social research*. Cambridge, UK: Cambridge, MA, USA: Polity Press; B. Blackwell.
- Shan, H.X. & Guo, S. B. (2016). Massification of Chinese higher education: opportunities and challenges in a globalizing context, in *Guo, S.B. and Guo, Y (Eds.) Spotlight on China: Changes in education under China's market economy*, SensePublishers: Rotterdam, Netherlands.
- Shaw, A. J., Shaw, K. J., & Blake, S. (2016). Examining barriers to internationalization created by diverse systems and structures in vocational education and training. *International Journal for Research in Vocational Education and Training*, 3(2), 88-105.
- Song, J. (2018). Creating world-class universities in China: strategies and impacts at a renowned research university. *Higher Education*, 75, 729-742.
- Tran, L. T. (2012). Internationalization of vocational education and training: An adapting curve for teachers and learners. *Journal of Studies in International Education*, 17(4), 492-507.
- Tran, L. T., & Dempsey, K. (2017). Internationalization in VET: An overview. in L.T. Tran, & K. Dempsey (eds.). *Internationalization in Vocational Education and Training, Technical and Vocational Education and Training: Issues, Concerns, and Prospects* 25. pp. 1-15. Springer.
- Wang, Y. (2016). *Research on the internationalization of China's higher vocational education*, Economic Science Press: Beijing (in Chinese)
- Wang, Y. N & Liu, B.M. (2018) Annual report of China's secondary vocational education 2018, Higher Education Press: Beijing (In Chinese)
- Welch, A. (2012). China-ASEAN relations in higher education: an analytical framework. *Frontiers of Education in China*, 7(4), 465-485.
- Welch, A. (2015). The minnow and the whale: Singapore-China relations in higher education. *International Higher Education*, (46), *International Higher Education*, 07/09/2015, Issue 46.

World Bank. (2012). Putting higher education to work: Skills and research for growth in East Asia. Washington, DC: World Bank.

Wu, H. T. (2019). Three dimensions of China's "outward-oriented" higher education internationalization. *Higher Education*, 77(1), 81-96.

Yang, R. (2002). *The third delight: Internationalization of higher education in China* (East Asia (New York, N.Y.)). New York: Routledge.

Yang, R. (2008). Transnational higher education in China: Contexts, characteristics, and concerns. *Australian Journal of Education*, 52, 272-286.

Yang, R. (2012). Soft power and higher education: An examination of China's Confucius Institutes. In E. Hartmann (Ed.), *The internationalization of higher education: Towards a new research agenda in critical higher education studies* (pp. 65–76). New York, NY: Routledge.

Yang, R. (2014). China's strategy for the internationalization of higher education: an overview. *Frontiers of Education in China*, 9(2), 151-162.

Zha, Q., Wu, H., & Hayhoe, R. (2019). Why Chinese universities embrace internationalization: an exploration with two case studies. *Higher Education*, 78(4), 669-686.

Zhang, Z. (2018). English-medium instruction policies in China: Internationalization of higher education. *Journal of Multilingual and Multicultural Development*, 39(6), 542-555.