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Expanding Higher Vocational Education: Rationale, Historical Review, and Development Trends in China

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ABSTRACT

Purpose: This paper provides a rationale and historical review of higher vocational education (HVE) globally and in China. The expansion of HVE is driven by dominant themes in policy, such as the encouragement of academics' societal engagement (ASE) for economic development and the need to address social problems like youth unemployment and poverty. The paper examines the development of HVE in China, which has faced challenges related to the degree of connection with high school curriculum and social stigma. The government has implemented the policies to elevate the social status and acceptance of HVE, enhancing its quality and relevance, and reinforcing its governance and management structures. **Method:** The paper also analyses the prominent research directions and development trends of HVE in China from 2000 to 2023, using the VOS viewer mapping tool and Web of Science. **Findings:** The result shows that key words like "study," "student," "education," and "vocational college," indicate key themes and focal points in the discourse. In addition, the terms "quality" and "management" being prominent in the analysis reveal concerns for maintaining and improving the quality of higher vocational education. In this way, understanding the mediating effects of "management" can provide possible solutions. While desk-based reviews using VOS viewer as an analysis tool offer valuable insights, they may lack the depth of contextual understanding that can be gained through qualitative analysis. **Future Research:** This paper calls for future study in the management of faculty deans in HVE institutions and the mediating effect of teachers on improving general teaching quality and student achievement, with an aim of improving the international standards of the vocational education and offering a significant intuition on the development of HVE.

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Introduction

The expansion of higher education is widely recognized as an essential component of globalization, and the development of higher vocational education (HVE) plays a significant role in individual, governmental and economic growth (Marginson, 2016). In line with prevailing policy trends (Bathmaker, 2017), international organizations such as the Organisation for Economic Co-operation and Development (OECD), the World Bank, and the European Union have been promoting an innovative policy that emphasises academics' societal engagement (ASE) as an essential component in bringing the advancements in economy and overall success within the knowledge based economy (OECD, 1996) and society. Particularly, the higher education has been acknowledged as a central mechanism for boosting the national productivity alongside advancing economic diversification and expansion (OECD, 2014; Schneijderberg et al., 2021). Although the university has certainly contributed to the systemic scientific domains such as medicine, education and finance (Barra & Zotti, 2018; Brekke, 2021; Hudon, Gervais, & Hunt, 2015; Maclean, 2007), it is imperative not to overlook the increasing demands for an expert labour force which is capable of fulfilling the specific occupational necessities in a knowledge-based community (Maclean, 2007).

In response to the growing socio-economic needs, higher education institution has been proactively participating in the vocational training which aims to amplify national economic competitiveness by giving rise to proficient professional labour market (Perkmann et al., 2013). This strategic alignment between HVE and economic development has become a world-wide trend, which demonstrates the increasing importance of vocational education in the higher education landscape.

Another rationale for the promotion of HVE is the urgent social issues that include unemployment, poverty and the gap between the need of skilled work labour to ensure the adequate economic growth and the total number of graduates from diverse higher education institutions (Li & Pilz, 2023).

As a result, the government aiming to expand the availability of apprenticeships has executed diverse strategies during the last two decades of the 20th century. More precisely, in the late 1980s, Germany and Finland integrated ASE into their national higher education strategies, implementing several steps to increase the connection between both academia and industry (Lyytinen, 2011). Similar efforts were made in Portugal around the mid-1990s (Santiago & Carvalho, 2016). In contrast, the UK's notable initiative began in 1980s with the introduction of Business and Technology Education Council (BTEC) qualification, which is a post compulsory award granted by BTEC (Wolf, 2011). In addition to the initial efforts, there were the applications of General National Vocational Qualifications (GNVQ) in the 1990s with the help of legislation which led to a substantial involvement of young adolescents aged 11 to 18. At the same time, the American government passed the *School-to-Work Opportunities Acts (STWOA)* in 1994. This demonstrated a strong focus on educating and training the individuals for employment (Levesque, 1995).

Although the rising number of HVE institutions and the graduates significantly meet the dynamic labour demands in the global market, vocational education is often observed as inferior due to its involvement in short term training periods and tends to be concealed by the preference for academic pathways in post-secondary students (Eiríksdóttir, 2023;

Kasim & Fachriah, 2018). Unlike the university in HE, HVE institutions provide a short-term training program (normally six months to three years) falling between secondary education and traditional university education, focusing on hands-on training and preparing individuals for specific roles in the workforce (Becker & Hecken, 2009; Hoelscher, Hayward, & Ertl, 2009). Under these circumstances, the work-based learning experience may mainly lead to a license to practice rather than an academic bachelor's degree, which fails to equip graduates with theoretical knowledge and hinders their climbing on the hierarchical ladder in their future careers in the labour market (Jones, Buntting, & de Vries, 2013; Wolter & Kerst, 2015).

Despite disadvantages when compared with academic higher education, Guile and Unwin (2019) claimed that HVE is an accessible way to tackle questions related to social justice and equity. This is supported by Webb et al.'s (2017) research, which argues that HVE provides alternative and accessible pathways to higher education by providing students with poorer academic performance in the increased 'academization' education system with practical skills that are directly applicable to the workforce. The growth of HVE generally arises from the two distinct policy objectives. Firstly, the measures aimed in enhancing economic competitiveness and productivity, and secondly, the efforts that bring equity and social justice, which are essential to broader the goal of increasing participation to HE for all (Webb, 2022). As a result, the expansion of HVE emphasises the value of diverse talents and experiences, contributing to a more equitable educational landscape and promoting the development of KE globally.

Higher Vocational Education in China

Higher education and vocational education both originated from different backgrounds, universities were generating scientific systemic knowledge whereas, vocational education mainly focused on the training of specific professionals. But this association has evolved with time, constructed by the social and economic factors. Across the world, the interconnection between massive higher education, polytechnics, elite higher education and different levels of vocational institutes developed complex and emerging dynamics with countries (Maclean, 2007).

With a clear policy orientation and intense labour market demands, HVE has also been favoured by Asian countries, especially developing economies, since the end of the last century (Tilak, 1988). This widespread vocationalization in Asia was due to (a) professional demands in primary industries, such as agriculture, and job vacancies in light manufacturing and service industries; (b) large population and educational "overproduction"; and (c) the urge to promote social mobility among the poor (Haas, 1994; Tilak, 1988). Across the continent, HVE is particularly essential for China, especially after the "reform and opening up" period initiated by Deng Xiaoping in 1978 (Stewart, 2015). Over the following three decades, China has gradually transitioned from a purely state-run and centralized economy to a dual-track economy with the moderating effect of the market economy (p. 4). The expansion of the Chinese economy and its increasing share of global marketplace rely on the consistent influx of low-wage and low skilled labour for the industries such as export processing. This necessitates the refinement in higher education to pursue proficient professionals for the evolving economy of China (Durden & Yang, 2006). Since the 1990s, Chinese HE institutions have offered vocational education programs at the secondary and tertiary levels. As HVE in China has become an

integral part of the HE, it is a significant form of higher education and an upper level of vocational education. In order to acquire the strong personality of the students in the higher vocational education colleges it is imperative to demonstrate a personality-based education model. Understand the revolution of talent training style and the quality enhancement of personnel teaching. Along with that, congregating the new normal of the renovation-driven society, the need for high quality technical expertise is required (Xiong, 2013). 2.1 Historical development in China: from 1949 to 2023

Between 1980 and 2000, China witnessed various educational reforms from primary to tertiary levels. This started with the law on 9-year Compulsory Education (6 years in primary school and three years in junior high school) enacted in July 1986 (Tang, Zhao, & Zhao, 2020). The expansion of enrolment in primary and secondary schools not only improves citizen's literacy rates with tuition-free education, but also increases social mobility by accumulating Chinese human capital over the long haul (Xiao & Liu, 2014). Gradually, China has shifted its educational focus from only higher education to a more broader perspective of mass education, with an objective of higher education widely This transition has become the main driving force for reforms in higher educational sector.

During China's industrial restructuring period, higher vocational education played a crucial role in the popularity of higher education (Volodina, Nagy, & Köller, 2015). Mutually, education should coincide with people's livelihood, rights, and personal development. Dating back to 1949, the rudiment of HVE was adopted from the USSR model due to the similar political and economic system. A more comprehensive education reform of HVE happened in the 1970s, when "four modernisations" (progresses in agriculture, industry, national defence, and science and technology) were required to be realised (Durden & Yang, 2006). To achieve the overarching goal of the Four Modernizations, China should "establish an independent and relatively complete industrial system and national economic system, then comprehensively modernize agriculture, industry, national defence, and science and technology so that our economy will be at the forefront of the world" (The Central People's Government of the People's Republic of China, 1954). The emphasis on vocational training was a response to the recognition of a skills gap in various industries. To meet these labour market demands, Higher vocational training programs were designed to produce graduates who can promptly join the job market and play their part in the enhancement of economic growth of the nation (Adamson, 1995; Mason, 1984). In the following decade, the systematic construction of HVE started alongside the development of general HE.

Initially, the launch of the "*Vocational Education Law of the People's Republic of China*" in 1996 first constructed three levels (elementary, secondary, and advanced) of vocational training (Yuan & Wang, 2021). The law likely outlined principles governing the development and operation of vocational education institutions (Hao, 2012), including:

Vocational education is an important component of the educational undertakings of the State and an important way to promote economic and social development and employment. The State shall develop vocational education, propel vocational education

reform, raise the quality of vocational education, establish, and improve a system of vocational education that keeps abreast of the socialist market economy and social progress (Ministry of Education of the People's Republic of China, 1996).

However, with the increasing demand for HVE among secondary school graduates and the rising number of HVE institutions, HVE in China also faced many challenges that affected its relevance and sustainability. To be more specific, although the number of tertiary HVE institutions grew and overall enrolment rose, more and more high school graduates chose general HE because, under this circumstance, the high-school education curriculum remains of profound relevance to that of the university in China (Yuan & Wang, 2021). In certain nations, the vocational education directs prestige and respect, while in others despite its significance as a substantial educational field, it continues to suffer from the low societal status and the negative perceptions. In China, the history of vocational education has been historically placed at the bottom of the educational legacy, often attracting the students with weaker academic records (Wang, 2024). Based on the recent study in Hong Kong and China, the author states that higher education in these places has been notably affected by the appearing market dynamics. Even though the recent modification in the higher education illustrates that these two places have been encountering similar worldwide trend, the global trend of marketization, which includes aspect like private charges, market competition, non-state involvement, corporate governance and performance management of the system should not be viewed as a uniform notion. Instead, the process of marketization differs across the countries, which presents both global impacts and specific national factors (Mok, 1999). Meanwhile, like in other western countries, there is often a social stigma associated with vocational education in China, with some perceiving it as a secondary choice compared to traditional academic paths (Wang, 2019; Yu, 2005). This stigma may discourage students from considering higher vocational education as a valuable and respected option (Wang & Ross, 2013). Accordingly, the "*Opinions of the State Council on Accelerating the Development of Vocational Education*" (General Office of the State Council, 2014) was introduced to enhance social recognition and attractiveness, improve quality and relevance, and strengthen the governance and management of HVE. In addition, the insufficient investment and funding for HVE led to inadequate infrastructure and teacher resources. Hence, by 2017, 335 billion RMB of funding had been invested in HVE in order to provide financial aid to students from low-income families, attract a high-calibre teacher workforce, and enhance HVE institutions' performance (Ministry of Education of the People's Republic of China, 2019).

Meanwhile, the Central Committee of the Communist Party of China (CPC) and the State Council urged the provincial government to allocate local funds, establishing comprehensive and communal vocational colleges (Fan, 2020). Soon after this initiative, there was a significant increase in the number of HVE institutions nationwide. This expansion included 1,270 higher education institutions (HEIs) and 1,468 HVCs located in 31 provinces by the year 2020 (Ministry of Education of the People's Republic of China, 2021). Generally, the preliminary goal of enlarging the HVE scale has been accomplished in higher education massification settings (Fan, 2020). This also marked the beginning of the next stage-stressing on capacity building and quality improvement.

Although the total number of HVE institutions has been roughly equal to that of general HE, prejudice towards vocational education still exists in Chinese society (Yuan & Wang, 2021). The central government aimed to adjust the bias by building up a fair appreciation of talent interlinked with socialism, spotlighting the significance of labour and skills along with encouraging the people to recognize and enhance their talents (p. 379). To put those into practice, the *Implementation Plan of National Vocational Education Reform* (The State Council of the People's Republic of China, 2019) was issued to raise the general teaching quality, improving student achievement. Two of these main tasks have been proven to be effective: the first was to fully utilise the role of educators and administrators like principals and faculty deans in order to enhance HVE's management and practice of instruction; the second was to launch trials of the 1+X certificate system, which required the graduates from HVE to obtain at least one vocational skill level certificate along with the academic qualification. Despite the fact that future tasks were clearly outlined in this blueprint, practical operations should be meticulously projected and conducted.

Nowadays, Augmented Reality (AR) technology is being used in different domains. The AR technology uses its applications in various industries which includes vocational education, medical training, maintaining industries and assembly of various tasks. AR technology applications are now increasingly being used for educating and training purposes (Chiang, Shang, & Qiao, 2022). It is observed that AR application has positive influence on the achievements of students that enhances self-efficacy associated with assembly of skills and theoretical knowledge. The students were able to understand the steps and guide of the process directly with the help of this technology by getting less help (Sirakaya & Kilic Cakmak, 2018).

The Research Trends of Higher Vocational Education in China: from 2000 to 2023

In the latest decade, reforms in HVE have showed essential needs for enhanced teaching quality, more justified management practices, and improved student performance. Meanwhile, policymakers' increased involvement in education reform has led to discussions among educators and researchers about the factors in schools that affect student achievement (Darling-Hammond, 2000). In this regard, this section is going to examine the prominent research directions and development trends of HVE from 2000 to 2023 in China, aiming at smoothing the pathways to improve the management level, teaching quality, and student achievement. Under this circumstance, VOS viewer (a mapping tool) and Web of Science (the global citation database) were used to retrieve and analyse data.

The key phrase "vocational training" was searched in the Web of Science to identify thematic areas in Chinese HVE (Figure 1). After manual scrutiny and removal of unnecessary words such as "i.e.", "long", and "proportion", and those with less than five occurrences, a total of 1703 word items were retrieved. Data processing by VOSviewer generated four clusters with 213 items and 13001 links, with a total link strength of 34146. As shown in Figure 1, the size of the circle represents the number of co-occurrences, while lines represent links between terms, with the thickness and distance indicating the link strength between two items.

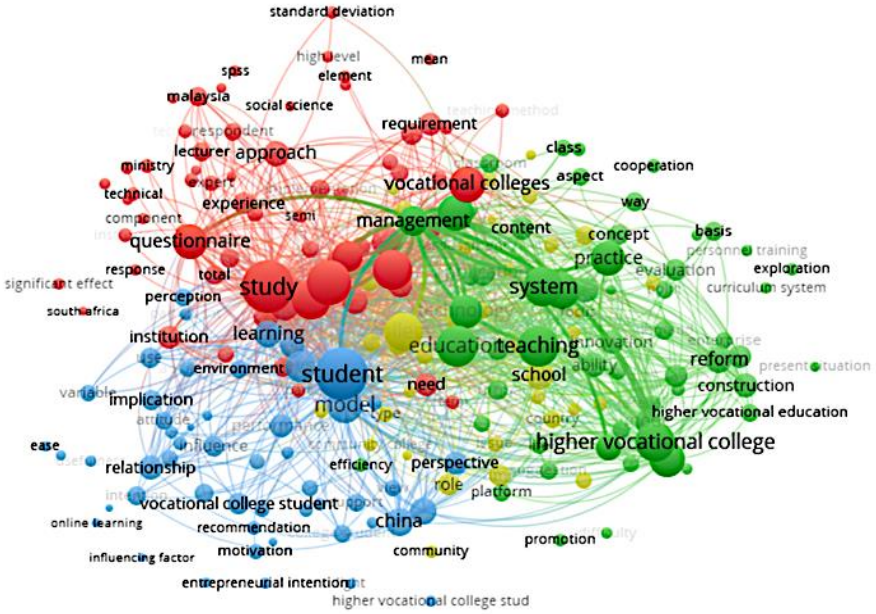

Figure 1: *The Development Trends of Vocational College.*

In Figure 1, the terms with the highest values of total link strength are: "study" (total link strength 211), "student" (total link strength 208), "education" (total link strength 205), "vocational college" (total link strength 202), "teacher" (total link strength 201), "training" (total link strength 196), "technology" (total link strength 191), quality (total link strength 189), "learning" (total link strength 188), and "management" (total link strength 177). Based on the findings of the network co-occurrence analysis, higher number of associations and stringer overall connections are related with increased occurrences.

Considering the value and the total strength of the link, the terms such as "student", "study", "vocational college" and "education" emerge as pivotal themes and central points within discussions about the Chinese HVE. These terms highlight the central elements associated with educational processes, institutions, and participants. As it has been revealed in empirical research (Durden & Yang, 2006; Fan, 2020; Hua & Yanjun, 2023; Wang, 2019), China has witnessed a significant expansion of higher education in terms of increased enrolment and the establishment of new institutions. During the last two decades, the discussions focused on accommodating a growing number of students, ensuring quality education, and addressing the challenges associated with massification (Mok & Wu, 2016).

While majority of the empirical research lies on the structure of HVE at the core, the terms "quality" and "management" being prominent in the analysis indicate a concern for maintaining and improving the quality of higher vocational education. This may point to efforts to promote the overall educational experience, curriculum effectiveness, and

institutional management.

Apart from the prominent topics in the existing research, the relevance of each topic has also been shown in the result by the distance of each cluster. The terms in Cluster 1 are related to the study, corresponding study methods, and contents, while Cluster 2 shows items about what education in HVE is like. In addition, Cluster 3 focuses more on trends related to students, and Cluster 4 regards the operational mechanisms in a vocational college. Based on the separating distance between each other, reflecting the strength of association between the trends, it is clear that the functioning of the college is centred on and strongly linked with methodologies and the content, the concerning matters of the students and the educational aspects related to HVE.

Although the operational mechanism was widely discussed within the empirical research perspective There has been limited studies attempted to enhance the management of HVE in Chinese institutes to support maintenance and operations. Implications may include considerations related to institutional management, governance, policies, and the overall functioning of vocational colleges. In this way, effective management may ensure that educational programs are well-designed, pedagogically sound, and aligned with industry needs, leading to a better learning experience for students (Huang & Lee, 2012; Ling, Chung, & Wang, 2023).

While these desk-based reviews using VOSviewer as an analysis tool offer valuable insights, the sources of data for VOSviewer analysis may have inherent biases due to the predominant research trends in the Chinese HVE field. Meanwhile, it may lack the depth of contextual understanding that can be gained through qualitative analysis, which calls for future study on this topic. However, the studies show that the evolution of HVE in China has been predominantly affected by the policies of the government. This progression can be delineated into four distinct phases such as, improvement in quality, enlargement in scale, reinforcing of capacity and increase in overall strength. of overall system. The transition between these development stages, was characterized by the introduction of new policy initiatives by the government of China (Fan, 2020).

Implications for Future Study

To reveal the research trends, it is worth noticing the circles of each cluster, which are enormous in size. In terms of study, apart from the "questionnaire" and "approach" in existing literature, the co-occurrence and link strength of words like "teacher", "training", and "knowledge" are exceptional. Likewise, "learning", "level", "model", and "performance" are outstanding in the cluster regarding "student". In the cluster related to "education," notable terms include "teaching," "system," "quality," and "technology," while the primary trends in the field of "college" involve "role," "field," and "time.". Each trend has been firmly proven in empirical studies.

As the student population represents an essential social strength in the enhancement of post-industrial information society. These students will gradually consider the roles of leading experts and will affect the social and economic growth of their nation, hence, shaping its competitiveness on a worldwide scale in future. Therefore, it is necessary to understand the prospects of the student's environment to effectively transit into the social and cultural capital of the state. This capacity primarily consists of education, professions,

and knowledge along with the valuable dedication to their chosen career domains. This dedication depends on the level of individual maturity, sense of responsibility towards the task, and the growth of future professionals (Vishnevsky, Narkhov, & Didkovskaya, 2018).

Specifically, Ferguson (1991) states that effective study relies deeply on teacher quality. From a socio-cognitive perspective, individuals, along with the role they are playing and the culture they are creating, influence directly on teacher efficacy and indirectly on students' attainment (Zusho, Pintrich, & Coppola, 2003). Educational psychologists also figure out that preexisting assumptions and knowledge can influence learners' studies when new information is introduced (Thompson & Zamboanga, 2003). To maximize the benefits and minimize the negative effects of the above facts on academic learning performance, numerous study models, like the self-regulated model (Pintrich, 2004; Zimmerman, 2008), have been set up.

However, as has been shown in Figure 1, the development of HVE involves various stakeholders and their interplay. Therefore, it is of great importance to examine the prominent trends linking each cluster and identify their mediating effects, outlining what should be considered to unpack the comprehensive development of HVE. Among the 4 clusters, although the associated strength between Cluster 2 and Cluster 3, Cluster 3, and Cluster 4, as well as that of Cluster 2 and Cluster 4, is rather low, the prominent trends of the first 3 clusters are closely related. It can be judged from Figure 1 that management was discussed in both study-based and educational teaching-based research. Concurrently, the significant focus was placed directly towards research which is concerned with student learning models and the academic environment.

Theoretically, effective leadership models can indeed exhibit managers' mediating effects in the context of higher vocational education. One of the significant models of Transformational Leadership emphasizes inspiring and motivating followers to achieve their full potential. In higher vocational education, a transformational leader, especially the Dean, acts as a mediator by fostering an innovative organizational culture (Ghasabeh, Soosay, & Reaiche, 2015). Such leaders encourage faculty and staff to embrace change, improve teachers' motivation, and align programs with industry needs (Bass & Avolio, 1993; Homrig, 2001).

In order to enhance the quality of teaching in higher vocational education practice, two lines of thought are becoming increasingly significant. The first one is derived from the constructivist learning theory and second one from the instructional design literature. The constructivist learning theory consists of family of theories but all in general have the main focus on the activities of the learner in understanding meaning. These along with the similar ideas have significant implications for teaching and assessment. Instructional designers for their role have focused alignment between the aims of a course or unit and the goal for analysing the performance of the student. This model might be inferred to most programs in the higher education (Biggs, 1996).

The quality of management not only ensures effective institution running but also significantly impacts school and student outcomes (Bush, 2007). In the context of higher vocational education, managers like Dean can act as mediators between different elements, affecting outcomes or processes (Pugacheva et al., 2016; Walker, Damanpour, & Devece, 2011). Management practices play an essential role in evaluating that how the curriculum

is formulated, defined, and made into practice, hence, exerting a considerable influence on the quality and practicality of the educational program. This impact extends to shape the characteristics of teaching methodology and effectiveness with which all the professional teachers scan impart their skills relevant to job. Effective management practices ensure the curriculum content and the industrial needs. It also fosters a robust teaching environment and the initiatives for the development of the faculty which aimed to increase the institutional efficacy and outcomes of the students (Drodge, 2002; Pipatpol, 2014; Walker et al., 2011). Therefore, the comprehensive advancement of HVE depends on managers' foresight, objective perspective, and wise leadership commitment (Bolman & Deal, 2017). Leaders' daily decision-making and issue-handling behaviours are prerequisites for successful school development.

In HE institutes, it is generally the principles that operate the process of ensuring results, which encompasses aim setting, involving the community, maintaining appropriate teaching methodology, and instructing stakeholders towards reaching the goals. Yet, in Chinese HEV institutions, the situation varies slightly as the deans of faculty in HEV have distinct academic focuses and specific goals to accomplish (Charoensukmongkol & Puyod, 2024). To understand the unique context of China, more studies should be done to explore the effective leadership approach of faculty deans to enhance school improvement and student learning.

Over the last decade, the HE institutions have been held increasingly answerable for measurable results. Decrease in the trust of public and increase in the conflict of resources in HE practices have resulted in the needs for institutes to demonstrate their efficacy, productivity, and organization. The examination of administrators might provide the adequate information about the effectiveness of institute, yet it might also lead to the high-stake examination process for individuals. The examination process may be bound to the decisions about promotions, increment in salaries, renewal of contract or dismissal (Rosser, Johnsrud, & Heck, 2003).

Yet, as Hallinger and Lee (2013) have claimed, the distribution of power and decision-making count. That means if a leader can convince others to share their vision, allowing them to cooperate and have confidence in one another, leadership is more likely to succeed (Mohlokoane & Coetzer, 2007). Since Özdemir and Yalçın (2019) have addressed the indirect correlation between instructional leadership and student achievement, the involvement of teachers as the mediators is of great significance. One of the most demanding aspect of leadership of dean as it influence the academic success of the students, is the recruitment of high qualified staff and operating with the faculty and department managers to increase the academic counselling and to promote high quality program for global knowledge wealth (Hyun, 2009). From the instructional leadership's perspective (Walker & Qian, 2022), the administration of the faculty deans are assigned with a multitude of responsibilities encompassing the establishment of academic aims, crafting the customized curriculum, bringing the skilful professional growth of faculty, and appreciating the standards of teaching. At the same time, the competition of the educators, collective opinion, motivation and expected outcomes contribute significantly to the achievement of student academia. This emphasizes the collaborative attempts which are required between the management and teachers to ensure and strengthen educational environment to foster the success of the students. By synergizing the leadership with

faculty and values, the HE institutes can optimize their capabilities to increase student's achievements and comprehensive development (Donohoo, 2018). Moreover, the effectiveness of leadership is not only a confrontation with itself but it is also influenced by other factors that include leadership style and practice (Hassan, Gallear, & Sivarajah, 2018).

In conclusion, from the beginning of the "reform and opening up" policy, Chinese HVE has witnessed a transformation from massive HVE education to a quality-driven pattern of modern HVE education. In the era of educational research in China, a significant focus has been on the versatile association between education, students, and teaching specifically within the context of HVE and institutes. Moreover, to enhance the future studies to delve into the efficient management of faculty deans in the higher education institutes, also determining the mediating impact of teachers.

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