11th International Conference on Higher Education Advances (HEAd'25)
Universitat Politècnica de València, València, 2025
DOI: https://doi.org/10.4995/HEAd25.2025.20166

Revisiting the Graduate Capital Scale: A Cross-Cultural Examination for China's Undergraduate Vocational Graduates' Employability

Jia Li, Ewan Wright
Department of Education Policy and Leadership, The Education University of Hong Kong, Hong Kong SAR, China.

How to cite: Li, J.; Wright, E. (2025). Revisiting the Graduate Capital Scale: A Cross-Cultural Examination of China's Undergraduate Vocational Graduates' Employability. In: 11th International Conference on Higher Education Advances (HEAd'25). Valencia, 17-20 June 2025. https://doi.org/10.4995/HEAd25.2025.20166

Abstract

This study examines the employability of undergraduate vocational graduates in China through the lens of Tomlinson's Graduate Capital Model (2017). Amidst shifting economic conditions and rising youth employment challenges, higher vocational education has gained prominence as a potential means to facilitate the education-to-work transition. This research adapts and validates the Graduate Capital Scale for China's undergraduate vocational education, employing a content validation process with expert panels. Findings indicate the necessity of contextual adjustments to employability frameworks, reinforcing the model's applicability beyond Western contexts. The validated instrument provides a foundation for self-assessment and career development among vocational graduates. By integrating cultural and economic specificities, this study offers insights into employability measures in diverse educational settings, informing policy and institutional strategies to enhance graduates' labour market readiness.

Keywords: *Employability; Self-assessment; Graduate Capital; Undergraduate Vocational Education.*

1. Introduction

Vocational education and training (VET) is regarded as one trigger of social and economic development, and in turn, the social and economic changes contribute to the development of vocational education (Lee et. al., 2020; Pilz & Regel, 2021; Tucker, 2019). The global shift toward knowledge-based economies, together with rapid technological advancement, has changed the nature of work (Pham & Jackson, 2020). It is widely recognized that traditional academic pathways alone may not sufficiently prepare graduates to navigate transformed labour

markets (Brown & Souto-Otero, 2020; Tomlinson, 2013). The massification of higher education has led to concerns about an uneven supply-demand relationship between graduates and employment opportunities (Brown, 2022). Associated youth employment challenges may constrain economic growth, opportunities for social mobility, and hinder alleviation efforts (Mok & Neubauer, 2016; World Bank, 2015) and bring individuals scarring effects and growing anxiety about career prospects (International Labour Organisation, 2024).

In response, a growing number of nations are shifting the focus of higher education away from traditional academic orientations towards higher forms of vocational education (UNESCO, 2022; World Bank, 2023a). This trend also includes China, the focus of this research, which has experienced an economic slowdown (World Bank, 2023b), and is at risk of a middle-income trap (Kharas & Kohli, 2011). There is tension between millions of vacancies for highly skilled talents alongside a record-high unemployment rate of bachelor's graduates (Fu, 2023; Ma, 2024; Nulimaimaiti, 2023). In recent years, the government has pursued a new reform agenda focused on higher vocational education, enabling higher vocational institutions to confer academic degrees (The State Council, 2019). Although the number of students in undergraduate vocational education has increased rapidly (see Figure 1), it remains unclear how students perceive their education and graduate employability in their education-to-work.

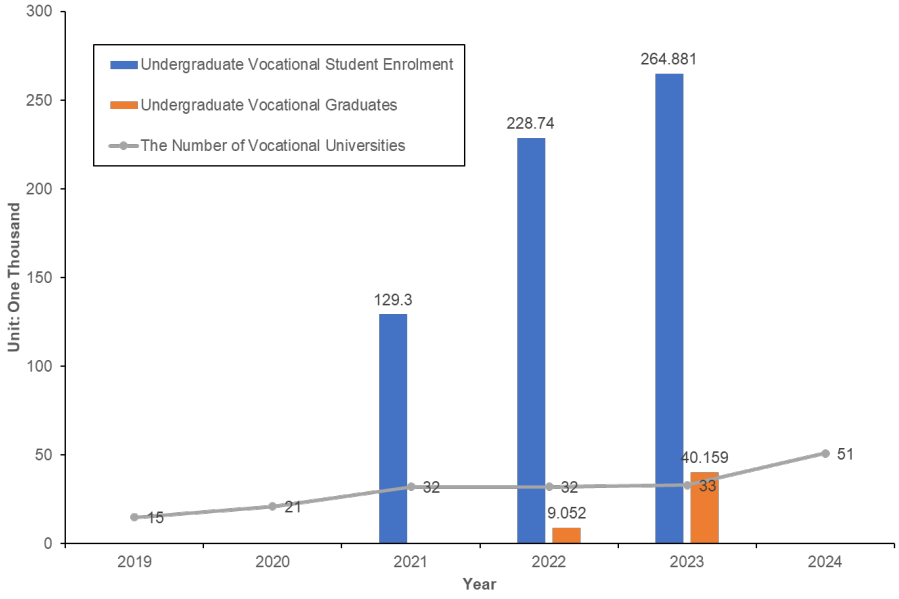

Figure 1. Undergraduate Vocational Education in Mainland China. Source: "2019, 2020, 2021, 2022 Number of Higher Education Institutions, by the Ministry of Education of the People's Republic of China, 2019, 2020, 2021, 2022 (http://en.moe.gov.cn/documents/statistics/2022/national/)". In the public domain.

2. Theoretical Framework

An expanding literature has discussed on graduate employability (Broadley et al., 2023; Huu Nghia et al., 2020, 2022; Ng, 2022; Tran et al., 2022). Pham and Jackson (2020, p. 45) pointed out that recent research revealed that possessing technical knowledge and skills was crucial for graduates to achieve favourable employment outcomes. However, it is not the only determinant for graduates' success in the job market. Therefore, it is crucial for the graduate employability agenda to embrace a broader and more comprehensive perspective that goes beyond simply acquiring employability skills in order to effectively address the evolving requirements of the global labour market. Many scholars have agreed that employability is not only the possession of a set of skills that are required or needed by employers but also a combination of different capitals or resources (Clarke, 2008; Tomlinson, 2017).

More recently, Yorke and Knight (2006, p. 8) defined employability as "a set of achievements, skills, understandings and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy." That is based on their USEM account of employability (2004), which is probably one of the well-known and respected models in this field. USEM stands for understanding, skills, efficacy beliefs, and metacognition. This model forms a large body of research-based scholarly work. However, it failed to clarify the concept of employability to individuals who are not experts in the industry, e.g., students and their parents.

2.1. Tomlinson's Graduate Capital

The framework is Tomlinson's (2017) Graduate Capital Model that seeks to measure the employability of graduates. Tomlinson (2017) developed Bourdieu's theory of capital (1986) to conceptualize the Graduate Capital Model in five interconnected dimensions, i.e., Human, Social, Cultural, Identity, and Psychological Capital to depict graduate employability. The Graduate Capital Scale (Tomlinson et al., 2021), grounded in this model, consists of 45 items distributed across these five dimensions. Initially validated among students from universities in the United Kingdom, the applicability to China's undergraduate vocational education remains under-researched. This study aims to adapt and validate the Graduate Capital Scale for undergraduate vocational education in China. The validated scale will be incorporated into a practical toolkit for China's undergraduate vocational students and graduates to self-assess their employability and identify their employability deficiencies for development.

3. Methods

A content validation process was conducted by using an expert panel review to contextualize the Graduate Capital Scale for China's undergraduate vocational education. The expert panel

included higher education institutional career guidance directors, faculty and department heads, HR managers from employers having recruited undergraduate vocational graduates, and researchers specialized in graduate employability. Experts were selected through purposive sampling based on their familiarity with China's undergraduate vocational education. The invited experts evaluated each item within the Scale by categorizing it as "Essential", "Useful but not essential", or "Not necessary" in an online survey. The Content Validity Ratio (CVR) was calculated by using Lawshe's (1975) formula, and only items meeting the minimum CVR threshold were retained (Kyriazos & Stalikas, 2018). To refine and finalize the questionnaire, follow-up interviews were conducted with three expert panellists.

Lawshe (1975, p. 566) had devised the following formula for the content validity ratio (CVR):

$$\mathrm{CVR} = \frac{\mathrm{n_e} - (\frac{\mathrm{N}}{2})}{\frac{\mathrm{N}}{2}}$$

in which the n_e is the number of panellists indicating 'essential' and N is the total number of panellists.

4. Results

A total of 47 valid responses were received for evaluating the translated and adjusted Graduate Capital Scale items. Scores were counted only if the item was rated as "Essential" by experts. After calculating CVR value based on Lawshe's formula (1975, p. 566), 39 items exceeded the minimum CVR threshold of 0.29 for 47 panellists (Lawshe, 1975, p. 568) and were retained in the final questionnaire. 6 items were excluded, including the item "I have an effective online career profile, LinkedIn, 51 Job, Boss Zhipin, etc." under human capital, and the item "I have distinctive achievements and interests which make me stand out from others." under cultural capital, together with 2 items under social capital and psychological capital respectively. All 9 original items under identity capital were retained. Structured interviews with 3 panellists reviewed and supported the adapted Scale. They also suggested supplementing the questionnaire with some background and socioeconomic status questions to finalize it. Overall, the final version of the questionnaire is available for further quantitative validation of the Graduate Capital Model among China's undergraduate vocational students and graduates.

The findings confirm the need for culturally specific adjustments in employability and reinforce the applicability of Tomlinson's Graduate Capital Model beyond Western contexts.

5. Limitation, Discussion, and Significance

The expert panel review contextually adapted and validated the Graduate Capital Scale in the context of undergraduate vocational education in China. The invited experts, covering a wide range of resources, directly from higher educational institutions, who know graduates well and guide their transition from education to work, as well as employers working closely with graduates, however, limited to some industries in some regions in China because of the employed purposive convenience sampling. The adapted and translated Scale is expected to be large-scale validated with final-year students and graduates to achieve the validity and reliability of the research on the employability of undergraduate vocational graduates through the lens of the Graduate Capital Model. That could also be supplemented by the perceived employability of undergraduate vocational graduates from employers' perspectives.

This study adds contextual relevance of the Graduate Capital Scale in a non-Western context, offering insights into the adaptability of employability measures across diverse educational settings. By developing a validated instrument to assess graduate employability in China's undergraduate vocational education. It provides a solid foundation for future evidence-based interventions aimed at enhancing professional development and career readiness, guiding reforms in undergraduate vocational curriculum design, and introducing employers' engagement in developing and assuring graduate employment readiness, which is rare in China's educational system.

This research can be duplicated in other emerging countries or economies, which are confronted with a similar paradox as China to develop a toolkit for their higher vocational graduate to facilitate their navigation in graduate labour markets.

References

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–259). Greenwood Press.

Broadley, T., Cai, Y., Firth, M., Hunt, E., & Neugebauer, J. (2023). *The SAGE handbook of graduate employability*. Sage Publications.

Brown, P. (2022). Higher education, credentialism, and social mobility. In J. E. Côté, & S. Pickard (Eds.), *Routledge handbook of the sociology of higher education* (2nd ed., pp. 351–362). Routledge.

Brown, P., & Souto-Otero, M. (2020). The end of the credential society? An analysis of the relationship between education and the labour market using big data. *Journal of Education Policy, 35*(1), 95-118. https://doi.org/10.1080/02680939.2018.1549752

Clarke, M. (2008). Understanding and managing employability in changing career context. *Journal of European Industrial Training, 32*(4), 258-284. DOI 10.1108/03090590810871379

European Commission (EU). (2015). *Modernisation of Higher Education in Europe: Access, Retention and Employability 2014*. European Commission.

Fu, C. (2023, August 23). China suspends report on youth unemployment, which was at a record high. *The New York Times*. https://www.nytimes.com/2023/08/15/business/china-youth-unemployment.html

Huu Nghia, T. L., Pham, T., Tomlinson, M., Medica, K. & Thompson, C. D. (Eds.). (2020) *Developing and utilizing employability capitals: Graduates' strategies across labour markets*. Routledge.

International Labour Organisation (ILO). (2024). *Global employment trends for youth 2024: Decent work, brighter futures*. https://doi.org/10.54394/FGPM3913

Jackson, D. (2020). The changing nature of graduate roles and the value of the degree. *Journal of Higher Education Policy and Management, 43*(2), 182-197. https://doi.org/10.1080/1360080X.2020.1777634

Kharas, H., & Kohli, H. (2011). What is the middle-income trap, why do countries fall into it, and how can it be avoided? *Global Journal of Emerging Market Economies, 3*(3), 281-289. https://doi.org/10.1177/097491011100300302

Kyriazos, T. A., & Stalikas, A. (2018). Applied psychometrics: The steps of scale development and standardization process. *Psychology, 9*(11), 2531-2560. https://doi.org/10.4236/psych.2018.911145

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563–575. https://doi.org/10.1111/j.1744-6570.1975.tb01393.x

Lee, H. S., Har, W. M., & Lee, S. Y. (2020). Impacts of Lower and Upper Secondary Vocational Education on Economic Growth. Journal of Technical Education and Training, 12(1), 71-81.

Ma, S. (2024, March 9). China jobs: push to raise incomes, social standing of indispensable skilled workers at 'two sessions' amid hi-tech drive. *South China Morning Post*. https://www.scmp.com/economy/economic-indicators/article/3254675/china-jobs-push-raise-incomes-social-standing-indispensable-skilled-workers-two-sessions-amid-hi

Mok, K., & Neubauer, D. (2016). Higher education governance in crisis: A critical reflection on the massification of higher education, graduate employment and social mobility. *Journal of Education and Work, 29*(1), 1-12. https://doi.org/10.1080/13639080.2015.1049023

Ng, B. (2022). Current status of higher education research in work readiness and job employability. In B. Ng (Ed.), *Higher education and job employability*. Springer. https://doi.org/10.1007/978-3-031-05716-8

Nulimaimaiti, M. (2023, December 7). China's college graduates to hit record high 11.79 million in 2024, adding to job market pressure. *South China Morning Post*. https://www.scmp.com/economy/economic-indicators/article/3243244/china-jobs-how-much-employment-pressure-worlds-second-largest-economy-facing?module=perpetual_scroll_1_RM&pgtype=article

Pilz, M. & Regel, J. (2021). Vocational Education and Training in India: Prospects and Challenges from an Outside Perspective. *Margin The Journal of Applied Economic Research, 15*(1), 101-121. DOI:10.1177/0973801020976606

Pham, T., & Jackson, D. (2020). Employability and determinants of employment outcomes. In T. L. Huu Nghia, T. Pham, M. Tomlinson, K. Medica, & C. Thompson (Eds.), *Developing and utilizing employability capitals* (1st ed., pp. 237-255). Routledge.

The State Council. (2019). *State Council encourages vocational education reform* [Policy brief]. The State Council of the People's Republic of China.

Tran, L. T., Ngo, N. T. H., Nguyen, H. T. M., & Thanh Le, T. T. (2022). *Employability in context: Labour markets needs, skills gaps and graduate employability development in regional Vietnam*. Palgrave Macmillan. https://doi.org/10.1007/978-3-031-04144-0

Tomlinson, M. (2013). *Education, work and identity: Themes and perspectives*. Bloomsburry Academic.

Tomlinson, M. (2017). Forms of graduate capital and their relationship to graduate employability. *Education + Training, 59*(4), 338-352. http://www.emeraldinsight.com/0040-0912.htm

Tomlinson, M., Port, A., Maguire, N., Zabelski, A. E., Butnaru, A., Charles, M., & Kirby, S. (2021). Developing graduate employability for a challenging labor market: the validation of the graduate capital scale. *Journal of Applied Research in Higher Education, 14*(3), 1198-1209. DOI: 10.1108/JARHE-04-2021-0151

Tucker, M. S. (2019). Introduction: The vocational education and training system you need depends on the kind of economy you want. In M. S. Trucker (Ed.), *Vocational education and training for a global economy* (pp. 1-7). Harvard Education Press.

UNESCO. (2022). *Transforming technical and vocational education and training for successful and just transitions: UNESCO strategy 2022-2029*. https://unevoc.unesco.org/pub/unesco_strategy_for_tvet_2022-2029.pdf

World Bank. (2015, October 13). *Addressing the youth employment crisis needs urgent global action* [Press release]. https://www.worldbank.org/en/news/press-release/2015/10/13/addressing-the-youth-employment-crisis-needs-urgent-global-action

World Bank. (2023a, July 12). *Improve technical and vocational education and training (TVET) to meet skills and labour mismatch* [Press release]. https://www.worldbank.org/en/news/press-release/2023/07/12/improve-technical-vocational-education-training-tvet-meet-skills-labour-mismatch

World Bank. (2023b, December 14). *Sustained policy support and deeper structural reforms to revive China's growth momentum – World Bank Report* [Press release]. https://www.worldbank.org/en/news/press-release/2023/12/14/sustained-policy-support-and-deeper-structural-reforms-to-revive-china-s-growth-momentum-world-bank-report

Yorke, M., & Knight, P. (2006). *Embedding employability into the curriculum (Learning and Employability Series 1)*. The Higher Education Academy. https://www.qualityresearchinternational.com/esecttools/esectpubs/yorkeknightembedding.pdf