

Research on the Influence of Teaching Quality on Employment Quality of Graduates in Higher Vocational Colleges Based on Human Capital Effect

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Abstract: Against the backdrop of large-scale enrollment expansion, higher vocational education in China is facing a new task of achieving an "increase in quantity and quality" in the cultivation of technical and skilled talents, and promoting fuller and higher quality employment for vocational college graduates. On the basis of reviewing and organizing relevant literature, this study constructs a conceptual model of the relationship between teaching quality, graduate human capital, and graduate employment quality in vocational colleges, and proposes relevant research hypotheses. Through a questionnaire survey of some vocational colleges in Chongqing, a total of 520 valid data were obtained, and the research hypotheses were validated using SPSS and AMOS software for reliability and validity testing, descriptive statistical analysis, correlation analysis, and structural equation modeling analysis. Research has found that the teaching quality of vocational colleges has a significant positive impact on employment quality, and human capital also has a significant positive impact on employment quality. Teaching quality also has a significant positive impact on human capital; Human capital plays a partial mediating role between the quality of teaching and the quality of employment. The research and analysis results indicate that vocational colleges should fully consider students' career development, reshape their value orientation, position industry needs, adjust professional settings, innovate teaching methods, promote curriculum system reform, strengthen the construction of teachers and teaching resources, collaborate with the main body to build a teaching quality assurance system, improve students' satisfaction with higher education and teaching work, improve teaching quality, and lay the foundation for better achieving high-quality employment.

Keywords: Teaching quality, Higher vocational colleges, Employment quality Human capital intermediary effect.

1. Research Background

(1) Era innovation: industrial structure transformation and upgrading drive the reform and upgrading of vocational education

Development is the top priority, and talent is the top resource. Industrial upgrading and restructuring are restricted not only by scientific and technological strength, but also, to a large extent, by the skill level and professional quality of workers. At present, China is in a critical period of industrial structure transformation and upgrading. In order to adapt to economic structure adjustment, achieve high-quality development objectives, and realize socialist modernization, a large number of high-quality personnel are needed to build a strong modern country. As an important part of the human resource system and education system, vocational education bears the important responsibility of training skilled talents, inheriting innovative technologies and solving employment problems. Since the 18th National Congress of the Communist Party of China, the framework of the modernization system for the development of vocational education has been preliminarily built, which has certain conditions and foundation to help the country basically realize the goal of modernization, but there is still a certain gap between the construction of a modernized social and economic system and high-quality modern education system.(Liu Xiaoli, 2018).

(2) Characteristic development: colleges and universities have the connotation of high-quality development to serve regional characteristic industrial clusters

In 2019, the Implementation Plan of the National Vocational Education Reform clearly pointed out that

"vocational education and general education are two different types of education and have the same important status", which clearly established the strategic positioning of vocational education in the national education system from the perspective of national policies. In 2021, the National Vocational Education Conference once again proposed to optimize the type orientation of vocational education and accelerate the construction of vocational education system. Vocational education is another type of education, which is different from general education. In order to realize the characteristic development of colleges and universities, better allocate regional educational resources and accurately realize the matching of personnel and posts, colleges and universities should concentrate on studying the problems on their own development path and research road. Clear orientation of talent training, to meet the needs of industrial group post talents as the value goal, through the precise matching of majors and posts, to achieve the organic unity of talent training standards and post competency standards.(Tang, H, 2019).

2. The Related Concepts and Theories

2.1. Higher vocational colleges

"Higher vocational colleges" is short for "higher vocational colleges", also known as "higher vocational schools", "higher vocational and technical colleges" or "higher vocational and technical schools", etc. "Encyclopedia of Chinese Education" defines it as: "The education of training advanced practical and applied talents belongs to the category of higher education, the higher level of vocational and technical education."

In this study, higher vocational colleges are defined as higher vocational education institutions that, according to the relevant laws and regulations of the People's Republic of China, meet the setting standards of national higher vocational schools, are registered and established by the Ministry of Education, administered by local education committees, and carry out full-time formal vocational education. Higher vocational colleges carry out teaching in accordance with the teaching plan approved by the competent department of education, and the colleges issue graduation certificates uniformly printed by the state to the graduates (Cheng Huobo, 2022).

2.2. Teaching quality

Liang Zhonghuan (2012) argues that: "Teaching quality is defined from three aspects: teaching itself, students' own development and external evaluation: In the process of teaching activities, on the premise of satisfying the law of education and the logic of scientific development, the degree to which the training objectives and specifications set by the school reach the established teaching objectives, the degree to which the knowledge, skills and values of students at this stage are fully developed and the degree to which the standards are reached, and the degree to which the relevant subjects are satisfied with the educational effects of students at this stage." This study takes teaching quality and employment quality as the main research variables, and considers that vocational education should be defined according to the principle of quality view in combination with its attribute of serving the economy and society. From the theoretical perspective of total quality management, objectivity is the core concept in the first place. It is extended to the field of vocational education, which takes educational service as its main content and believes that vocational education should meet the needs of vocational education students and make them satisfied.

In this study, teaching quality is defined as: in the process of teaching management in higher vocational colleges, the training objectives and specifications formulated by the school reach the established teaching objectives, and students' satisfaction with the educational effects of this stage, including the development of knowledge, skills and values, to meet the needs of individual future development. (Liang Zhonghuan, 2015).

2.3. Employment quality

Related research on employment quality originated in the 1970s. Employment quality contains numerous elements and complex contents, and its concept and definition have been in constant revision, supplement and improvement, without unified terms and concepts. Comparing different countries different organizations different groups about the quality of employment and professional term is different, similar to our country employment quality concept and research content of "employment quality" of the European Union, the international labor organization (International Labor Organization, ILO) "Quality employment" and "decent work" and the "Quality of Working life" in the United States. Decent work refers to productive work in conditions of freedom, equality, safety and dignity, where workers' rights are protected and adequate pay and social security are provided. The employment quality of students in higher vocational colleges is to apply the subject and connotation of employment quality to the specific group in higher vocational

colleges.

According to this research question, using the theoretical perspective of quality management, this research defines employment quality as: the degree of satisfaction of graduates of higher vocational colleges on employment, including the degree of satisfaction of individual needs in the aspects of income, welfare benefits, development space and working environment that students can obtain. (Sun Libing, 2012.)

2.4. Total Quality management theory

In the 1990s, some scholars applied the theory of total quality management to the field of education, and formed some typical theoretical models. For example, Professor Huang Zhaolong's "Three basic model" elaborated the total quality management model of teaching from three aspects: basic links, basic work and basic methods. Stephen Mogtrod and Colin Morgan's 11-element model proposed that successful TQM in schools should contain 5 key elements, 3 foundations and 3 conditions. Bunstin's Quality School model applies TQM to school management as a practical philosophy encompassing customers, continuous improvement, process and leadership. Navaratnam's Quality Travel model starts with the purpose of customer satisfaction and goes through six stages of the journey before achieving continuous improvement in quality. These models highlight the application of elements such as customer focus, continuous improvement, process management, standardized management, evaluation and decision making in educational organizations (Li Jing (2015)).

In the final analysis, the impact of the teaching quality of higher vocational colleges on the employment quality of graduates is the quality problem of training students in higher vocational schools. Therefore, the concept of total quality management should be introduced to cultivate the most needed "high quality" workers in the market. Integrating the total quality into the research process is conducive to the implementation of the principal position of students in vocational education service. Especially with the increasing emphasis on vocational education in recent years, it is necessary to promote the high quality and conformal development of vocational education to promote the high quality development of vocational education. We should not only follow the most basic laws of education and teaching, but also make use of the core of the theory of total quality management, borrow the advanced experience of modern enterprise management, take talent training as the core, take employment quality as the guidance, pay attention to the students' satisfaction in education service, And then build a set of benign PDCA closed loop of vocational education from the input of high-quality students, the training of teaching process and the output of high-quality talents, improve the quality of talent training, improve the efficiency of education, to meet the needs of economic development.

3. Research Methods

(1) Literature research method

According to the research outline and research questions, determine the scope, theme and keywords of the literature collection. A large number of Chinese and English literatures on vocational education teaching quality and employment quality were retrieved through official websites such as China National Knowledge Network, VIP journal resource integration service platform, ERIC education resource

information database, Web of Knowledge literature database and Google Academic search engine. Then, through literature reading, related materials were sorted out, summarized, interpreted and analyzed, so as to grasp the basic overview of the current research on vocational education teaching quality and employment quality, form the relevant core concepts, theoretical categories and thought system of this research, and lay a theoretical foundation for the research framework. Then combined with cutting-edge concepts and theories, compare different cases, organize the research data, and accumulate materials for further research on issues related to the quality of vocational education and employment.

(2) Questionnaire survey method

This study takes Chongqing vocational college graduates as the research object, from the basic situation, teaching quality, employment quality, human capital and other aspects of relevant questions and scale design. The questionnaire was issued and recovered, and the data analysis tool was used to analyze the questionnaire, describe the status quo, correlation analysis, intermediary test, etc.

(3) Structural Equation model

Based on variable structure equation model (Structural Equation Modeling, SEM) of covariance matrix to discuss the relationship between the latent variables and the dependent variable and all, is one of the important means and tools for multivariate data analysis, is a kind of construction, estimates and verification method of causality model. Structural equation model processing multiple dependent variables at

the same time, and compare and evaluate different theoretical models, can replace path analysis, multiple regression analysis, factor analysis, and so on, clearly analyze the role of single structural factors on the whole and the relationship between single structural factors. The use of structural equation modeling and data analysis is a dynamic process that needs constant modification. In this study, the relationship between teaching quality and employment quality of graduates in higher vocational colleges and the mediating role of human capital in it will be analyzed by AMOS using structural equation model. In accordance with the basic method of structural equation model test, this study first presupposes the relationship model among teaching quality, human capital and employment quality, carries on the fit degree analysis between the model and the existing data, and then adjusts and modifies the model according to the fit degree, and then tests again, and repeats this process until the data fit degree reaches the research standard.

4. Survey Results

4.1. Test results of the research hypothesis

The structural relationship between latent variables and the estimated value, T value and hypothesis testing results of their standardized path coefficients are shown in Table 1. It can be seen that all hypotheses pass the T-test, and the path coefficients are significant at the level of confidence $\alpha=0.01$.

Table 1. Path hypothesis test

Study the hypothesis	Path relationship	Standardized path coefficient	T-value	Conclusion
H1: The teaching quality of vocational colleges has a significant positive impact on the employment quality of graduates	A. Teaching quality → C. Employment quality	0.146 * * *	4.248	Support
H2: The teaching quality of vocational colleges has a significant positive impact on the human capital of graduates	A. Teaching quality → B. Human capital	0.164 * *	3.017	Support
H3: The human capital of vocational college graduates has a significant positive impact on employment quality	B. Human capital → C. Employment quality	0.326 * * *	6.943	Support

***p < 0.001, **p < 0.01, * p < 0.05

4.2. Intermediate effect test

In order to further clarify the relationship between teaching quality, human capital and employment quality, and whether human capital has an intermediary effect, this study applies the mediation test program developed by Preacher et al to

analyze it, and uses the confidence interval method to estimate again the standard error and confidence interval of the indirect effect. The original data (N=527) were sampled 5000 times at random and 95% confidence intervals were calculated. The verified data are shown in Table 2.

Table 2. Report the total indirect effects of human capital

	Point estimate	S.E	Z value	95% confidence interval	
				lower	upper
Total effect	0.253	0.050	5.06	0.108	0.301
Direct effect	0.109	0.043	2.53	0.067	0.236
Indirect effect	0.144	0.025	5.76	0.011	0.112

The upper and lower interval of Bias-corrected and Percentile does not contain 0, and $Z > 1.96$ or $Z = 1.96$, are the criteria to prove the validity of the indirect effect. As shown in the above table, the confidence interval of indirect effect does not include 0, so the intermediary effect is confirmed to exist, and the significance level Z value = 5.76 > 1.96, so the

intermediary effect is confirmed to exist significantly. Similarly, the direct effect was tested, and the results showed that the direct effect of this study also existed significantly. Therefore, it is believed that human capital plays a partial mediating role between teaching quality and employment quality, and its mediating effect accounts for 56.92%.

According to Wen Zhonglin et al. (2016), the most commonly used mediating effect size is the proportion of indirect effect to the total effect. When the effect is significant and the effect size is, it is considered that the study has reasonable evidence to conclude that the effect is statistically and practically significant. Cohen(1969) classified effect sizes ranging from 0.2 to 0.5, 0.5-0.8 and above 0.8 as small, medium and large respectively. The results of this study showed that the effect size was 56.92%. It can be concluded that graduate human capital plays a significant mediating role between teaching quality and employment quality.

5. Discussion and Suggestions

5.1. Discussion

In terms of the teaching quality of higher vocational colleges, graduates have a high degree of overall satisfaction with the teaching quality of higher vocational colleges. Relatively speaking, the employment planning and guidance of colleges get the lowest score, the management of campus daily affairs gets the highest score, followed by the construction of hardware facilities. Students recognize the daily management system of higher vocational colleges, and the teaching buildings, student dormitories, teaching equipment and so on can meet the daily needs. Employment planning guidance is relatively low, but the score is still above 4 points. It is speculated that the colleges and universities have organized work related to employment planning guidance, but the students' satisfaction and recognition of the work is not high, and the guidance effect is not good. In the aspect of graduates' personal human capital, the overall level is above the average, among which the development ability score is the highest, that is, students after studying in school, their own psychological adjustment ability, self-management ability, practical innovation ability and other development ability has been greatly improved. In addition, professional skills are lower than the average level, that is to say, when the graduates think that the vocational colleges for their own professional skills training is not obvious. In terms of the employment quality of graduates, the average score of each dimension is between 3-4 points, which can be considered that the overall employment quality level of vocational college graduates is above the average level. The top three dimensions of average score are enterprise evaluation, employment stability, job-matching, job-hunting difficulty, career development prospect, working conditions and welfare benefits.

To test the structural relationship among the teaching quality, human capital of graduates and employment quality of graduates in higher vocational colleges, the data results show that the estimated value of standardized path coefficient, T-value and hypothesis test results all pass the T-test. The path coefficient is significant at the level of confidence $\alpha=0.01$, and the significance P value of hypothesis 1 and hypothesis 3 is less than 0.001. The significance P value of hypothesis 2 is less than 0.01, indicating that the teaching quality of higher vocational colleges has a very significant positive impact on the quality of employment, human capital has a very significant positive impact on the quality of employment, teaching quality has a significant positive impact on human capital. Enrollment and employment are two important gateways for the input and output of higher vocational education. The intermediate links of talent training, such as curriculum setting, practical teaching and employment

guidance service, are the concrete embodiment of teaching quality and will directly affect the quality of talent training. The quality of graduates' employment is an important feedback to measure the quality of talent training in colleges and universities. It can be considered that the teaching quality has an extremely important impact on the employment quality.

5.2. Suggestion

(1) Reshape the value orientation of higher vocational colleges

The value orientation and school-running philosophy of higher vocational colleges are the most important guiding ideology permeated in the school-running process, which directly influences and determines the educational orientation and talent training path of higher vocational colleges. At present, the tendency of pragmatism and utilitarianism still exists in the running practice of some higher vocational colleges, and it becomes more and more fierce with the development of economic society. General basic education should not take "enrollment rate" as the only quality standard, and vocational education should not only take "employment rate" as the quality evaluation index. In the new era, higher vocational colleges need to reflect on their school-running value orientation, infiltrate humanistic values into school-running goals and purposes, take people's comprehensive quality as the coordinate of training activities, take promoting students' all-round development as the goal, improve students' employability as the direction, and improve the overall employment quality as the purpose(Yan Yiping, 2020).

(2) Precise positioning of industrial demand and professional Settings

The integration of production and education is an important way to improve the level of vocational education, which can effectively improve the pertinency and comprehensiveness of talent training in vocational colleges, transport high-quality skilled talents in response to the transformation and upgrading of industrial structure, and provide solid support for industrial human resources allocation. First, we should pay attention to the comprehensive integration of production and education in professional construction, achieve the hierarchical and structural integration of "production" and "teaching", do a good job in the organic integration of major and region, major and industry, major and enterprise, as well as the common development of professional positioning and construction, course content and design, teaching method application and innovation. Finally, we should optimize the professional structure and highlight the characteristics of colleges and universities. In the construction of professional cluster, there is a prominent problem of the convergence of the specialty Settings in the regional higher vocational colleges. The homogenized specialty construction process leads to a certain amount of resource reorganization and waste, and the function of meeting the demand of regional talent positions is also extremely limited. Characteristic development can restrain the arbitrary expansion and repeated construction of vocational education, and optimize the limited educational resources to the maximum extent. Therefore, higher vocational colleges should base on the integration and planning of campus resources, create specialty with characteristics, construct talent training mechanism with characteristics, and better improve the quality of talent supply(Garry Patrick M, 2023).

(3) Innovate teaching methods to help reform the curriculum system

Teaching according to students' aptitude and scientifically matching professional courses and teaching methods are the basic work to improve the teaching quality of colleges and universities and guarantee the employment quality of graduates. Therefore, it is an important means to continuously pay attention to the education quality management within colleges and universities and to continuously improve the human capital of the graduates' idiot-oriented advantages in higher vocational colleges. Classroom is the most direct and efficient way for students to accept knowledge and improve the stock of human capital(Huang Jingbao, 2008). The curriculum structure and teaching method of the school will directly affect the quality of classroom teaching. Therefore, the key tasks to improve the quality of talent training are to accurately assess students' personality characteristics and development plan, reform the curriculum system of colleges and universities, and innovate education and teaching methods..

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