

Research on the Development of a Multidimensional Evaluation System for Full-time Teachers in Modern Vocational Colleges

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Abstract: In the pursuit of establishing a multidimensional evaluation system for full-time teachers in line with the unique features of vocational education and elevating the performance and capabilities of full-time instructors in vocational institutions, this study endeavors to construct a novel and comprehensive evaluation framework for full-time teachers in vocational colleges. Leveraging the distinctive "integration of industry and education" talent development model in vocational education and addressing the prevailing challenges within the evaluation system for full-time instructors in vocational colleges, the overarching goal is to nurture an exceptional cadre of full-time educators within vocational institutions. This initiative aims to foster an increased number of high-caliber technical and skilled individuals to support the development of regional economic and societal progress.

Keywords: Modern Era; Vocational Colleges; Full-Time Teachers; Multidimensional Evaluation System

1. Introduction

Teachers in vocational colleges are the primary drivers and pivotal elements of vocational education reform. Conducting a scientifically effective evaluation of vocational college teachers is advantageous for the reform and advancement of vocational education. However, the development of the evaluation system for teachers in vocational colleges lags far behind the development of vocational education. A comprehensive and well-tailored system for evaluating teachers according to the features of vocational education and its development is yet to be established. This study delves into the problems existing in the evaluation of teachers in vocational colleges. It aims to construct a multidimensional

evaluation system for full-time teachers in modern vocational colleges and establish comprehensive and multi-faceted implementation measures, with the objective of enhancing the scientific and rational nature of the evaluation system for full-time teachers in vocational colleges[1].

2. Problems Existing in the Evaluation System for Full-Time Teachers in Chinese Vocational Colleges in the New Era

Currently, experts and scholars have conducted research on the evaluation system for teachers in vocational colleges from multiple perspectives and put forward corresponding recommendations and countermeasures. However, the system still predominantly relies on traditional evaluation criteria, especially lacking the recognition of the "characteristics of vocational education" and the new requirements for vocational education in the new era [2-4]. Based on a literature review and survey analysis of the evaluation system for teachers in vocational colleges, several key issues can be identified [2,3]:

2.1 Insufficient Recognition of the "Characteristics of Vocational Education"

Vocational colleges significantly differ from undergraduate colleges in terms of talent cultivation objectives and modes. The "integration of industry and education" talent cultivation model and the objective to nurture high-quality skilled talents in vocational education determine the special requirements and dimensions for evaluating teachers' professional abilities and occupational qualities in vocational colleges. Evidently, directly applying the teacher evaluation system of ordinary undergraduate colleges does not reflect the unique characteristics of vocational education. A departure from the vocational features in the evaluation system is clearly detrimental to the construction of a

"dual-qualified" teacher workforce and the implementation of "integration of industry and education", thus significantly affecting the realization of the talent cultivation objectives in vocational education.

2.2 Lack of Developmental Evaluation

The outcomes of the evaluation of full-time teachers in vocational colleges are often used for performance-based salaries, promotion, commendation, and professional titles, primarily constituting a punitive evaluation. This approach overlooks the ultimate purpose of teacher evaluation, which is merely a means to improve the work performance and skill levels of teachers. Therefore, developmental evaluation is a crucial aspect. However, the current evaluation system lacks developmental evaluation, failing to sufficiently incentivize and guide the professional development of full-time teachers[4].

2.3 Inadequate Scientific Evaluation Content

In the evaluation of full-time teachers in vocational colleges, the emphasis is usually placed on assessing teaching, research, and social service aspects, but it lacks evaluations regarding teachers' professional skills, practical abilities, team building, innovative teaching practices, guidance in student innovation and entrepreneurship, and skill competitions. Moreover, there is an excessive emphasis on research capabilities and academic research achievements, with research occupying a significant proportion in most evaluation systems for full-time teachers in vocational colleges. This also leads to some full-time teachers excessively focusing on the completion of individual tasks, being unwilling to invest excessive time and effort into team building and teaching reform.

2.4 Incomplete Evaluation Subjects

The evaluative subjects in the teaching evaluation in vocational colleges generally include students, teaching supervisors, department leaders, colleagues, with the teachers themselves often being overlooked as evaluation subjects, and lacking external evaluation. Firstly, students often lack a correct understanding of the importance and evaluation criteria for evaluating teachers, leading to a certain degree of arbitrariness and

personal preference in evaluations, where the results often fail to truly reflect the teachers' teaching capabilities. Secondly, teaching supervision evaluations exhibit excessive randomness, often making definitive judgments based on just one or two observations, resulting in a sense of unfairness. Thirdly, peer evaluations can easily be influenced by personal relationships or conflicts of interest, often turning teacher evaluations into mere formalities.

3. Research on the Construction of a Multidimensional Evaluation System for Teachers in Modern Vocational Colleges

In this section, based on the principles of developmental evaluation and punitive evaluation, qualitative evaluation and quantitative evaluation, and the combination of competency evaluation and performance evaluation [4,5], a multidimensional evaluation system for teacher performance evaluation that aligns with the characteristics of vocational education is constructed[6].

3.1 Construction of Evaluation Indicators for Full-time Teachers in Vocational Colleges

In accordance with the development requirements for teachers in current vocational colleges, the established evaluation indicators mainly include basic qualities, teaching proficiency, research capabilities, and social services. By combining quantitative and qualitative criteria, the evaluation criteria system for various categories of teachers is designed. The specific indicators are shown in Table 1.

3.1.1 Basic qualities indicators

In this evaluation framework, the primary indicator of basic qualities includes two secondary indicators: adherence to laws, regulations, and institutional rules, as well as academic normative behavior. To underscore the significance of violations pertaining to laws, regulations, and institutional rules, the primary indicator of basic qualities is represented in coefficient form. This implies that, in addition to the weighted scores based on the primary indicators of teaching proficiency and research capabilities, the basic qualities score is also factored in. The foundational score for basic qualities is 1 point. In cases of violations such as breaching laws,

regulations, institutional rules, academic ethics, or norms, corresponding deductions are applied based on official determinations, with graded deductions ranging from 0 to 1 point depending on the severity of the transgression.

3.1.2 Teaching performance indicators

Within this indicator framework, the primary teaching performance indicator includes three secondary indicators: classroom teaching quality, student cultivation quality, and

teaching achievements.

Classroom teaching quality primarily encompasses student evaluations, teaching supervision evaluations, and peer evaluations, weighted averages of which are calculated based on the three evaluation outcomes. This evaluation offers a comprehensive evaluation of a teacher's teaching effectiveness, instructional content, teaching methodologies, and their overall teaching approach.

Table 1. Evaluation Indicator System for Vocational Teachers

Primary Indicators	Secondary Indicators	Tertiary Indicators
1. Basic Qualities	1.1 Compliance with laws, regulations, and institutional rules	Violation of laws and regulations Violation of institutional rules
	1.2 Academic normative behavior	Violation of academic normative behavior
2. Teaching Proficiency	2.1 Classroom teaching quality	Student evaluations Teaching supervision evaluations Peer evaluations
	2.2 Student cultivation quality	Student cultivation quality
	2.3 Teaching achievements	Representative achievements (3-5 items), including representative research papers, patents, projects, etc.
3. Research Capabilities	3.1 Research achievements	Representative achievements (3-5 items), including representative research papers, patents, academic projects, etc.
	3.2 Academic potential	Research project funding status Research proposals
4. Social Services and Other Contributions	4.1 Social services	Academic services Professional technical services
	4.2 Other contributions	Entrepreneurial practices, technology transfers, and other contributions

Student cultivation quality mainly refers to the mastery of students' professional skills, their employment circumstances, the recognition of graduates, and their career development. Teachers provide relevant materials, and peer-review experts evaluate and assign scores based on student evaluations, students' relevant performance, and materials provided by the teachers[7].

Within the secondary indicator of teaching achievements, in order to break away from traditional paradigms that overemphasize on scores, admission, diplomas, papers, and titles, teachers are required to present 3-5 of their most representative educational research and practical accomplishments[8]. Educational research and practical activities primarily encompass the optimization of educational teaching programs, innovative educational concepts, adjustments to professional structures, reforms in talent development models, and innovations in curriculum systems,

instructional content, and teaching methodologies. In terms of evaluation, peer-review experts thoroughly scrutinize the level of a teacher's teaching achievements by examining comprehensive supporting materials provided by the teacher.

3.1.3 Research performance indicators

The most significant disparity between the research activities of faculty members in higher vocational colleges and those in regular universities lies in the emphasis on applied technological research, focusing on collaborative innovation, coordinated research and development with enterprises and industries, as well as product technology transformation and upgrading. Therefore, the design of the performance evaluation for research among faculty in higher vocational colleges should be oriented towards professional and technical applications, with the effectiveness of solving actual problems encountered by enterprises and industries

serving as the primary basis for evaluation. Within this evaluation system, the research level primary indicator includes two secondary indicators: research achievements and research potential.

Within the secondary indicator of research achievements, in order to transcend the traditional framework with an overemphasis on scores, admission, diplomas, papers, and titles, faculty are required to provide 3-5 of their most representative individual research outcomes along with corroborating evidence of their societal impact[8]. During peer review, the panel should be guided to focus on technological applied research and its outcome transformation, including emphasis on the application for technical invention patents, the adoption and instructions of decision-making recommendations, as well as the accolades received for research outcomes.

Research potential is primarily evaluated based on a teacher's research project initiation status and the submission of their research proposal, with scores assigned by experts in the relevant field.

3.1.4 Service and other contributions indicators

Teachers in vocational colleges are inclined to serve the local socio-economic development through their social service endeavors. Therefore, the primary indicator of service and other contributions includes two secondary indicators: social service and other contributions.

The secondary indicator of social service includes: (1) Academic service: The roles of university teachers in academic institutions and social organizations are important indicators reflecting their research capabilities and social influence. Academic titles or honors also serve as factors for measuring a teacher's research level and academic impact. (2) Professional and technical service: For instance, engaging in technological innovation and research and development targeting practical problems faced by enterprises and industries, providing decision consulting, conducting technical training, and delivering popular science lectures. In terms of evaluation, peer-review experts can thoroughly examine a teacher's social service and other contributions by assessing supporting materials provided by the teacher.

The other contributions indicator primarily

encompasses entrepreneurial practices, technology transfer, and other activities that contribute to the enhancement of professional and technical abilities during the tenure of the teacher. Evaluation and scoring are conducted by experts in the relevant fields.

3.2 Weight Analysis of Evaluation Indicators for Teachers in Vocational Colleges

In order to determine the appropriate weights for the evaluation indicators that align with the characteristics of vocational colleges, this study invites 10 experts to assess the importance of each indicator using evaluation scales, and the corresponding weights are determined using the Analytic Hierarchy Process [8-10]. Considering the characteristics of different types of teachers and the varying emphases of evaluation for different series of teachers, the weight vectors for different series are derived based on the judgment matrices provided by the experts. The weight distributions for each series are as follows:

For the professor, associate professor, and assistant professor series, the evaluation is conducted with a weight distribution of 5 (teaching): 5 (research): 2 (service). This series emphasizes a balanced evaluation of both teaching and research, with specific service indicators designed (including qualitative evaluation criteria such as teaching delivery, participation in social activities, provision of strategic recommendations, and facilitating student growth).

For the senior lecturer and lecturer series, the evaluation is conducted with a weight distribution of 4 (teaching): 1 (research): 1 (service). This series focuses on assessing teaching organizational abilities such as knowledge impartation, student evaluation, extracurricular guidance, and teaching methods, with a smaller emphasis on research evaluation.

For professors taking on additional responsibilities, such as serving as deans or department heads, the evaluation is conducted with a weight distribution of 1 (teaching): 1 (research): 4 (service). The main focus is on assessing their administrative leadership and management abilities, as well as their contributions in providing services to enterprises and conducting research, highlighting their exemplary and influential

role in university development and service.

3.3 Comprehensive Evaluation of Teachers in Vocational Colleges

Based on the aforementioned indicator system and indicator weights, the college forms an

evaluation committee to conduct a comprehensive evaluation and ranking of teachers' performance. The evaluation system based on the Analytic Hierarchy Process is illustrated in Figure 1.

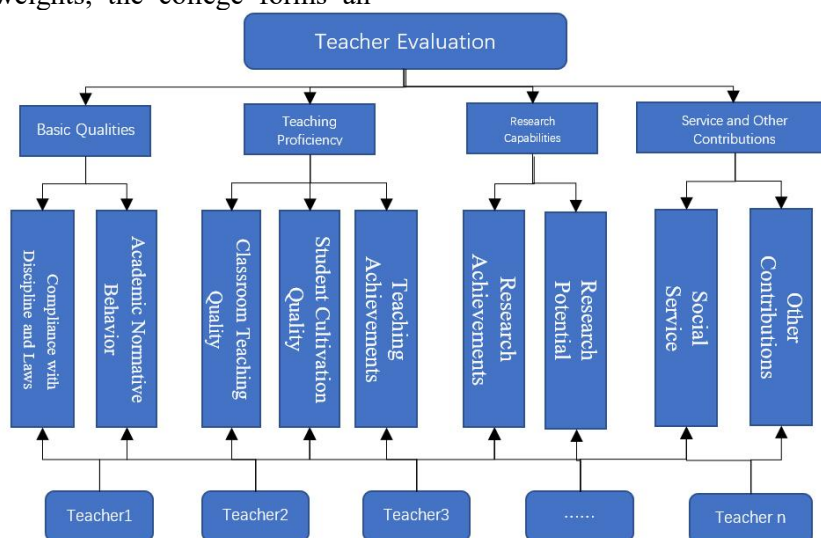


Figure 1. Analysis Diagram of Teacher Evaluation Level in Higher Vocational Colleges

The evaluation committee conducts a comprehensive evaluation of teachers using Formula (1), where represents the comprehensive evaluation score of the -th teacher, is the evaluation score of the -th teacher in the -th indicator, is the weight of the -th indicator, and is the score for ethical and moral conduct that can veto all other scores.

$$M_i = (\sum_{j=1}^n r_{ij} W_j) r_0. \quad (1)$$

The evaluation results are divided into five levels: A, B, C, D, and E. Where A indicates that the evaluated teacher's competence significantly exceeds the professional requirements, reaching an outstanding standard; B indicates that the evaluated teacher's multiple competencies surpass the professional requirements, achieving an excellent standard; C indicates that the evaluated teacher exceeds the professional requirements in some aspects, reaching a good standard; D indicates that the evaluated teacher basically meets the professional requirements; and E indicates that the evaluated teacher does not meet the professional requirements.

Performance evaluation results serve as the basis for the distribution of individual performance bonuses for the year and the salary increment for the next year. Teachers at the D level receive no bonus, while those at the E level not only receive no bonus but may also face the possibility of dismissal if they

receive an E rating for three consecutive evaluations. For teachers who do not meet the evaluation standards (E level), a specialized committee evaluates their annual performance to ensure fairness and impartiality.

4. Conclusion

The construction of an evaluation system for teachers in vocational colleges is a crucial aspect of faculty development. Conducting a scientific and effective evaluation of full-time teachers in vocational institutions is beneficial for the reform and advancement of vocational education. Based on the issues within the current evaluation system, vocational colleges should adopt a combination of developmental and reward-based evaluation, qualitative and quantitative evaluation, as well as competence and performance-based evaluation principles. This approach should shift from the original outcome-based evaluation to a process-oriented evaluation, thereby establishing a diversified evaluation system that aligns with the characteristics of vocational education. This will help improve the work performance and skill levels of full-time vocational teachers, ultimately building an excellent faculty team capable of cultivating more highly skilled and qualified talent for regional economic development.

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