Research on Evaluation Index System for Comprehensive Quality of College Teachers

Tao Yongmei

College of Humanities & Sciences of Northeast Normal University; Jilin Changchun, 130117, China

Abstract: China has the largest number of elderly people in the world. The state should cultivate a large number of industry management talents for the well-being of the aged to cope with the aging society. The most important subject of talent training is the high-quality professional teacher. With the support of big data, it is convenient for us to make an objective, fair and scientific evaluation of the competency of teachers, to construct the evaluation index system which is as detailed as possible, quantified and operable, and to provide scientific protection for the high-level and sustainable development of the university and alleviate the contradiction of aging society.

1. Introduction

It is one of the important bases for judging the competency of the well-being teachers by making an objective and accurate evaluation of the actual or potential value of the teachers' role activities. As a certain social role, the well-being teachers can meet the needs of social well-being talents training, meet the needs of occupation, job and their own needs, which is very essential to the teacher's teaching and teaching achievement, professional ability and quality, individual career development and college overall quality level and is the indispensable important content and links for university teacher management and personnel training work. From the point of view of the position of the teachers, the evaluation of the post competency of the teachers should be the core of the evaluation system. From the methodological point of view, the post competency evaluation involves many aspects such as orientation, index, process, method. The evaluation system of the job competency of well-being teachers which is specific, scientific, reasonable, practical and effective is of great significance to personnel management and educational reform. [1]

Well-being teachers as a special group must be strengthened on the basis of quantification to promote the evaluation of the precision, refinement and elaboration. Under the big data technology, the original evaluation model not only faces severe challenges, but also ushers in a rare opportunity. Grasping this opportunity will make the evaluation of the post competency of the well-being teachers more intelligent, valuable and more adaptable to the progress and development of the times.

2. Connotation Characteristics and Evaluation Limitations of Post Competency of College Teachers

"Competency" is the concept proposed earliest by Kelan from Harvard University. Dinuke proposed that teacher competency refers to the teacher's personality characteristics and knowledge which are different from integration of teaching backgrounds, teaching skills and teaching attitude. [2] In addition, Zeng Xiaodong from Beijing Normal University believes that teacher competency will be understood as the sum of knowledge, the skills and values held by teachers. [3] Other researchers also argue that teacher competency refers to the professional knowledge, professional skills and professional values that teachers have in the individual and that are relevant to good teaching. [4]

The overall description of the relationship characteristics between teacher competency and teacher, namely: teacher competency is a necessary condition for teachers to engage in education and teaching. Teacher competencies are included in the core content of professional knowledge,

professional skills and values held by the teachers which has a direct influence on the practical activities and teaching performance. The teacher's competency belongs to the quality and characteristics of individual teachers and shows in a certain environment. The teacher competency is the main object for teacher management evaluation in teacher training institutions and schools. But in view of the relationship among teachers 'competency, teachers' individual characteristics and their work attitudes, the competency of teachers in general should cover five aspects: professional knowledge, professional skills, personality traits, work attitude, value orientation and teaching performance.

Competency is difficult to measure with a simple measurement. Firstly, the post competency of teachers is closely related to the special requirements of teaching posts and the specific requirements of their work and the post competencies of teachers are different under different working conditions and job requirements. Secondly, the teacher post competency is reflected in a certain post environment through knowledge, ability, motivation, attitude and skills, some of which are dominant, but some are hidden at sometimes, which can not be judged by a single achievement. Thirdly, the post competency will develop and change in the long-term work practice, showing the trend of enhancement. The evaluation for it can not be confined to static information.

At present, there are many limitations of the performance evaluation of university teachers. The work responsibilities of university teachers mainly focus on teaching work and scientific research. For the well-being teachers, their noble personality and dedication and love are of great significance in the completion process of their work. Most of the current evaluation of the evaluation is static, so that this evaluation can not objectively understand and judge the post competence of teachers and is difficult to promote the professional development of teachers.

Even if some colleges and universities have been focused on the evaluation of the competency of teachers, in the evaluation system model indicators qualitative evaluation still is mainly used, so that it inevitably leads to the evaluation results are not objective and true. It is necessary to establish a new model of teacher evaluation for well-being teachers.

Second, under the big data, changes of post competency evaluation of university teachers

3. The Opportunity to Evaluate the Post Competency of Teachers in Big Data

McKinsey Research Institute of the United States pointed out that big data is the next innovation, competition and productivity frontier. The arrival of the big data era means that the management and decision-making of universities will also be based on data analysis, abandoning the traditional evaluation which is incomplete, unilateral, subjective and empirical. [5] The references and basis of post evaluation of teachers are undoubtedly the various data or information generated by teacher posts activities. On the one hand, these datum are increasing, on the other hand they are changing and have meticulous and dynamic reflection of teachers' job performance from all angles.

Based on the technological method of big data, judging the status of post competency of teachers according to the current information changes and analyzing its prospects are the decision basis on teachers' appointment and arrangement in order to achieve high level and high efficiency of personnel Management in university.

Well-being teachers are practitioners in a special field. The post competency evaluation system should serve the personnel arrangement and management of colleges and universities. First of all, we must adhere to the development principles of post competency evaluation and focus on the changes and development of teachers. [6] Second, we must adhere to the evaluation principle of people-centered, highlighting the knowledge, capacity, skills, attitudes, individual qualities and potential value of teachers, dynamic evaluating the teacher's post competency. Third, we must adhere to the refinement and precision principles of evaluation. Under the support of big data technology, the refinement and precision of post competency evaluation can be realized and it has good maneuverability. The pursuit of refinement and precision of the evaluation methods can make college management more reasonable and fair, more scientific and efficient.

Based on big data technology, teachers' post competency evaluation based on daily records or individual activities left a variety of debris information. First of all, to build a data system for

evaluation based on cloud technology, we should follow the idea of breaking up the whole system into zero then divide the whole system into several subsystems, through some means of collecting teachers' non-structural data information into a subsystem which, finally to achieve induction, synthesis and unity. [7] Second, to use data within the system for cloud computing, we should analyze the characteristics of each teacher's human capital. Although the data accumulated by each teacher may not have a causal relationship and the value of the density is relatively low, the data sources contain high value judgments, for their comprehensiveness, integrity, level, fragmentation and authenticity. As long as use the high-quality analysis and processing, you can find the internal relationship. Third, through the analysis of the data information, we can judge the competency of the teacher and instruct the teacher to follow the post configuration and performance expectation in order to clarify the direction of the teacher's effort and their achievement goals and finally play an effective management and incentive function.

Thirdly, the construction of the evaluation system of the post competency of the well - being teachers from the perspective of big data

4. The Post Competency Evaluation Model Design Based on Big Data

The post competency evaluation of well-being teachers involves the complex relationship between a variety of issues of quantitative and variable and problems of quantitative, variable and result.

The model design of post competency evaluation based on big data is helpful for relevant factors to be structured, logicalized and abstracted in evaluation system to highlight the main factors and important content, so that evaluation based on rigorous statistical data and theoretical derivation. The model will be based on three dimensions and six kinds of major contents to design construction and further refine the specific evaluation index system.

There are three dimensions. First, the individual dimension is the first competence of well-being teachers in college. The individual dimension mainly involves the internal factors such as teachers' physical, psychological, character, attitude, value, and efficacy and so on. [8] Such as positive and optimistic attitude, the altar altruistic values, the passion for the cause of well-being and so on will have a greater impact on the formation of cultivated well-being talents. Second, the task dimensions of the competency of well-being teachers. The well-being teachers of are more exaggerated have an exclusiveness of competency for their special tasks. First of all, they have the mental stress. The labor process of the well-being teacher is not a simple movement of machinery, but a comprehensive application and creation of knowledge and skills. Secondly, the labor process is more complicated. The internal logic and external dynamics of the well-being teacher's work determine the complexity of the work of teachers. Meanwhile the students who are cultivated by well-being teachers should not only have the theoretical knowledge, but also have quality and love for helping others. The psychological cultivation is most difficult. Third, it is the high standard of knowledge and skills. Fourth, the strategic dimension is the fourth competency of well-being teachers. If the teacher's characteristic type is consistent with the school's strategy type, the teacher's job performance will have a better performance.

Based on three dimensions, we regard six kinds of major contents as the first level indicators, including professional qualifications, professional knowledge, professional skills, business performance, work attitude, health level and so on. Each level indicator also contains a number of secondary indicators, such as the post qualifications include qualifications of degree, professional qualifications, professional titles and types of characteristics (research type, teaching research type or application type). Professional knowledge includes academic knowledge, educational knowledge and experienced knowledge. Professional skills include teaching skills, scientific research skills, service skills and management skills. Business performance includes teaching performance, research results, service effectiveness and management incentives. Work attitude includes job identification, educational philosophy, job responsibilities and professional ideals. Health level includes physical and mental health and character traits. [9] On the basis of secondary indicators, we also clarify third indicator which is assigned to the target level of the score. [10] Under the support of

big data technology, the level of indicators is the more detailed, the more conducive to analyze and sum up the accuracy of the teacher's post competency, so that the teacher's job allocation becomes more responsive and adaptive. The overall design model of post competency will be the basic frame and support for constructing the detailed evaluation index system.

Based on the big data technology, the evaluation model of the post competency of the well-being teachers is designed for the detailed evaluation index system a basic framework. On the one hand, on the basis of the secondary indicators, the evaluation index will be refined to avoid subjective and empirical thinking. On the other hand, the refinement degree of the refinement index should be appropriate. In addition, we should insist on people-oriented. And then to facilitate the operation is the third condition. Such as the refined content of scientific research ability can be set to "explore", "innovation" and "spirit of exploration" and so on, and finally they are determined the number of entries and assigned by the various groups of experts.

It is a meticulous and complicated work to evaluate the post competency of the teachers. In the era of big data, such work which has become relevant technical conditions becomes feasible, which requires colleges and universities should focus on teachers' evaluation work toward the direction of specialization for talents selection, training and application to provide scientific protection, so that it makes the overall health and sustainable development of colleges and universities possible and truly becomes a strong social security to alleviate the aging of our society.

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