# Human Resource Management Framework Construction under Competency Model

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Abstract-How do you define the skills, behaviors, and attitudes that workers need to perform their roles effectively? How do you know they're qualified for the job? In other words, how do you know what to measure? Some people think formal education is a reliable measure. Others believe more in on-the-job training, and years of experience. Others might argue that personal characteristics hold the key to effective work behavior. All of these are important, but none seems sufficient to describe an ideal set of behaviors and traits needed for any particular role. Nor do they guarantee that individuals will perform to the standards and levels required by the organization. A more complete way of approaching this is to link individual performance to the goals of the business. To do this, many companies use competencies. These are the integrated knowledge, skills, judgment, and attributes that people need to perform a job effectively. By having a defined set of competencies for each role in your business, it shows workers the kind of behaviors the organization values, and which it requires to help achieve its objectives. Not only can your team members work more effectively and achieve their potential, but there are many business benefits to be had from linking personal performance with corporate goals and values. This research firstly gives a systematic job-analysis of the networked education college and establishes the framework of the competency model. Then, coupled with relative statistical analysis and data validation works, the Behavioral Event Interview (BEI) method is applied to different sample groups to give elaborate definition of the general competency characters, the job-family competency characters and specific-job competency characters step by step. A three-leveled competency model composed of 14 general competency characters, 11 job-family competency characters and 14 specific-job competency characters is finally constructed, and its value for the further study on competency development is detailed at the end.

*Index Terms*—competency model, human resource management, job-analysis

## I. INTRODUCTION

Since 1990s, several researchers have put forward the role description and competency framework [1]-[3], and brought an important influence on China. However, most

of China's present researches stand on the descriptive, hypothetical and theory-based method instead of the quantitative, empirical and practice-based ones. More seriously, the present competency structures are always set up by educational specialists and also by assuming working staff of distance education as educational specialists. Such philosophy doesn't fit for the practice of Chinese distance education [4]. To the colleges, the urgent need is a staff that can produce high performance and integrate personal promotion and individual behavior with organizational development. This is just the purpose of Human Resource Management (HRM). To realize successful HRM, one of the critical tasks is to build up effective competency development system and to construct the competence model is the first step. Competency model means an organizing framework that lists the competency characters required for effective performance in a specific job, job family (group of related jobs), organization, function, or process. It includes any individual characters (motivation, specialty, attitude or values as well as knowledge, cognition, or skill) which can be reliably measured and identify excellent efficiency from common one [5]-[7] It describes not only fundamental standard on competency of a post, but also sets up a future goal for individual's competency development [8]-[10]. With the set of behavior levels, it can also make the competency easier to be measured [11]. Because of the above, the competency model is often treated as one of the most effective tools for capability studies [12]. Internationally, there has gained great achievements based on competency model in the instructional filed [13]-[15]. However, the related research in China only has a history of 10 years or more, and mainly focuses on k-12 education [16]-[18]. The researches on higher educator are absent, and competency model for distance educators, extremely deficient. Therefore, this research project carried out a systematic research on distance educators' competency and to improve the HRM of the distance education trial universities. This article mainly introduces the work in the first stage-competency description and model construction on the basis of job-analysis.

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### II. RESEARCH METHOD

Competency model is a job-cored one and supports career development by providing them visibility into activities and requirements in different work circumstances. So, this research starts from job analysis on staffs of networked education colleges. The work group of networked education colleges can be mainly divided into three staffs: teaching staff, managing staff, technical staff, which totally contains 8 kinds of separate positions, as Table I shows.

Job-family	Specific job	Main job responsibilities
Teaching	Lecturing	In charge of teaching design, teaching subject content, develop instructional resources; organize online
staff	teacher	interactive activities and complete learning evaluation
		Research, apply and evaluate new model, technology and tools of distance learning
		Provide suggestions and strategies for instructional reforming programs conducted by networked education
		college and trial university
		Offer strategies and suggestion for competency development of distance educators.
	Assistant	Monitor online learning process, help dealing with bad learning behavior
	teacher	Provide academic support for distance learners, such as online question-answer, homework evaluation,
		resources providing, etc.
		Provide students with none-academic support such as building and maintain learning team, helping building
		communications between students and teachers
		Provide suggestion for competency development of online teachers and students.
Managing	Public	Predict and gain insight into the development of distance education so as to offer suggestions for institute
staff	administrative	development.
	manager	Conduct planning, cost control and human resource management of institute.
		Plan, conduct, evaluate and offer suggestions for distance education program
		In charge of packaging, publication and distribution of distance educational products; Solve relevant legal
		matters on intellectual property.
		right
	Educational	Provide services on instructional information and examination service.
	administrative	Monitor and evaluate online teaching activities and give solutions if any question founded
	manager	Complete evaluation of online teacher
	Resource	Manage devices and learning resources of institutes
	manager	Help students use various types of electronic resources and practice sites outside of distance education institute.
		Provide consultation and training on learning resource management
Technical	Technology	Predict and master the latest development of information technology so as to provide suggestions for
staff	developer	integration and application of new
		Technology
		Design and construct network environments, hardware environments and software environments
		Develop platform, database and various interactive tools, and complete software engineering management
		Check and settle the various technical problems
	Material	Design and develop web courses, multimedia material and relative resources of instructional devices.
	maker	Edit and integrate various types of instructional material provided by teachers
	Technology	Maintain working condition of instructional devices, network equipment and software environments; Find and
	servicer	solve simple technical problems.
		Provide technical training on teachers and provide suggestions on technological training programs
		Provide distance learners with technological consultation and service.

Job system in the college has a three-level structure, as shown in Fig. 1. To certain employee, the route to his/her work position can be described as "distance education staff-job family (group of related jobs)-specific job". Each level gives some limitations when defining specific job competency characters. Distance education staff delimits fundamental and essential attribute, knowledge capability and values which can identify this specific staff from other instructional workgroups. Job family defines specific working skills, attitude and values to complete a set of works. Specific job regulates skills, knowledge, attitude and methods required to fulfill certain working task in details. Job system in the college has a three-level structure, as shown in Fig. 1. To certain employee, the route to his/her work position can be described as "distance education staff-job family (group of related jobs)-specific job". Each level gives some limitations when defining specific job competency characters. Distance education staff delimits fundamental and essential attribute, knowledge capability and values which can identify this specific staff from other instructional workgroups. Job family defines specific working skills, attitude and values to complete a set of works. Specific job regulates skills, knowledge, attitude and methods required to fulfill certain working task in details. Questions with STAR technique (BellSouth, 2002): (1) what was the Situation in which you were involved; (2) what was the Task you needed to accomplish; (3) what Action(s) did you take; (4) what Results did you achieve. Then, the competency characters showed or hidden in the interviewees' story are identified according to competency coding dictionary and then analyzed statistically. BEI is an excellent method for identifying the interpersonal and management competencies that are often difficult to define (Marrelli, Tondora & Hoge, 2005).



#### **III. RESEARCH FINDING**

The interviewees of BIE include two groups: 10 persons as excellent performance group (Group A) and 10 persons as ordinary performance group (Group B). The Group A is selected from ones who gained rewards and titled as "model" when performance evaluation. One chief judge and another assistant judge separately complete the coding of interviews' key behaviors according to the dictionary. The data analysis subjects to the coding results of chief judge when the category agreement of the two is more than 0.7, otherwise, the recoding should be done till the category agreement exceeds 0.7. The basic indicators of data analysis include frequency, rating scores and total scores (i.e. product of frequency and rating level). Rating level means numeric value of Just Noticeable Difference (JND) of competency character in the scale, here it takes the number 1. For example, if the specific behavior of an interviewee in Communication skills appears as: once of level 1, three times of level 2, twice of level 3, twice of level 4, its frequency should be: 1+3+2+2=8,total scores= $1 \times 1+2 \times$  $3+3\times2+4\times$  2=21,mean of rating scores= $21 \div 8=2.625$ . The result proves that the two groups behaviors have significant differences onto the all 14 characters except "Perusing Benefit". That means the 14 high performance-oriented items can be defined as the general competency characters.

Besides the special abilities of China's distance educators put forward by Li & Chen (2004)[19], three concepts are considered when conducting the competency coding dictionary, such as philosophy of flexible management (one that change the will of organization into individuals' self-conscious behavior by means of non-binding persuasion), viewpoint of human-oriented service (providing personalized teaching supporting service according to individual's difference and particular requirement), sense of technology integration (actively complete integration of technologies with different types and structures). The Delphi method is also used here to improve the coding dictionary framework and the results tell that all the designed indicators are recognized as necessary for the BIE analysis. The interviewees of BIE are composed of teaching staff (18 persons), managing staff (16 persons) and technical staff (16 persons).

Analytical results of the teaching staff show that the frequency, rating scores and total scores of all competency characters vary greatly between two groups except "Personal Charm" and "Psychological Analysis". In the managing staff, all have distinct differences with an exception of frequency and total scores of "Negotiation Skills" and "Marketing Skills". In technical staff, besides "Artistic Expression" and "Social Skills" which has no significant difference in the frequency, all other characters distinct sharply between two groups. After removing the characters which failed to distinguish the excellent performance, there are finally 8, 7 and 9 characters are decided to be the initial job-family competency characters of teaching staff, managing staff and technical staff.

Every job-family contains different specific jobs, as shown in Fig. 1. Specific-job competency characters should be not only in job-family competency characters, but also can clearly identify competency required in different post within the same job-family. Therefore, we make a Second T-test to the job-family competency characters confirmed in BIE. Those with significant difference between verified positions are confirmed as specific job competency characters, and the rest are treated as final job-family competency characters which are commonly required in all positions.

According to analysis, the frequency and total scores of "Communication Skill", "Media Presentation" and "Instructional Evaluation" varied little, showing that these three competency character belong to final job-family competency character. As to "Teaching Ability", "Subject Literacy" and "Course Design", the lecturing teachers behave much better than the assistant teacher, so we define these three as competency characters of lecturing teachers. On the other hand, the assistant teachers have an apparent advantage on "Monitoring & Supporting" "Guiding and & Recommendation", thus own the two as their competency characters.

The consistency of the coding made by the two judges is totally important to the objectivity of the research. Two parameters, Category Agreement (CA) and Reliability coefficient (R), are adopt here to verify the consistency. CA is defined as CA =2S/(T1+T2), S means the number of same coding made by different judge, T1 is the coding number of judge 1, T2 stands for the coding number of judge 2 (Winter, 1994).R is calculated as: R=n  $\times$ K/[1+(n-1)×CA],n stands for number of judges(Dong, 1990). During the coding for general competency characters, the value of CA fluctuates from 0.598 to 0.813, and the total value is 0.749. The value of R varies from 0.748 to 0.915, and the total value is 0.856. During the coding for initial job-family competency characters, the value of CA differs from 0.621 to 0.826, with total values of 0.731, 0.702 and 0.718. The value of R changes from 0.766 to 0.905, getting total values of 0.851, 0.825 and 0.836. All these show that the coding results have a higher consistency, meaning that the data analysis is reliable and effective (Boyatzis, 1982).

Each competency character has complete structure, that is, name, definition, relevant characteristics, behavioral levels and behavioral description. Behavioral level can be helpful to better identify competency characters which are similar in meaning. For example, "Technology Ability" and "Information Literacy" sound almost the same, but they have completely different focuses. Technology Ability is defined as conducting works with necessary software and hardware in a network environment and its level 3 can be described as: being sophisticated to professional software such as financial processing software and multi-media material development software, etc. Information Literacy refers to competency to access, process and express information accurately and timely in network environment and its level 3 are: effectively reading, selecting and evaluating information acquired. Even though each competency character is defined 5 levels from the lowest to the highest, it doesn't mean every employee should be required to reach the highest level for completing his/her job. Level 5 only defines an ideal situation and has a prediction to future competency development. Therefore, competency model, especially competency behavioral level, not only describes final target of staff training, but

also defines a set of required knowledge, skills and attitude, which are crucial to decide the training contents. Furthermore, the behavioral levels are confirmed from real working circumstance and its definition can provide an operable, observable, and measurable statement about behavior standard which needed for excellent working performance. Therefore, competency model can be quickly transformed into indicator system of competency evaluation when being put into proper working circumstance at the same time a suitable evaluation method is adopted. All these make it possible to build up a systemic and competency model-based framework for professional competency development for distance educators. That is exactly what we plan to do: construct the competency model for Chinese distance educators and then make efforts to transform it into training and evaluation system to improve the staff quality of distance education organization. The whole research plan is designed with the framework of HRM, which means: (1) For HRM: set the research target as to improve the HRM; (2) Of HRM: use the main activities of HRM as research subjects; (3) With HRM: carry out the research with the most effective method of HRM filed. Job analysis is the basis and prerequisite of competency model construction. The distance education institute in China has its specific management background, work position distribution and job responsibilities, and some positions may be even strange to foreign educators. Therefore, the competency model designed for China may not be completely applied to distance educators in other countries. However, as an effective method of HRM, competency model has a universal serviceability and can provide valuable perspective for professional development research, which is just the experience we hope to share with other colleagues.

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