Development of Competence based management and Performance Assessment System for Academic Management: Empirical Investigation

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Abstract—In knowledge based economy, organizations face critical issues of survival and competence. By implementation of competence based management system organizations can increase the capability of managing and utilizing the talent of the employees to achieve superior performance. Like any other organization, the educational institutions are also thinking seriously towards their competence management. As with the emerging knowledge, the teaching profession has become a very challenging. The role of the faculty member is no more demands knowledge transferring process but it has become a knowledge sharing process. Hence, there is need for the educational institution to improve their academic quality by incorporating the knowledge creation and knowledge service to the society. The paper explores the various competencies and their relevance to educational institution. The competencies represent the personality, ability, knowledge and the skills factors. It provides the guidelines for the various stake holders of educational institutions for assessment and gap identification.The paper presents the developed competence model for the faculty members. It presents the various behavioral indicators to assess the identified competencies and their importance. It analyses the future benefits of the competence model in succession planning and career graph growth.

I. INTRODUCTION

In the knowledge economy, there is a logical consequence to analyze the concept of academic profession to see forward the role of teacher in this century of tremendous challenge for higher education. It is not unknown that the definition of academia –and correlatively the meaning of teacher– it has been widely discussed but, finally without a general consensus, there is no a basic universal characteristics of academic profession. Like any other field (i.e. laws, architecture, medicine, etc.). We accept that the disciplinary field of the teacher, the institutional context and political-social-cultural factors in countries has incidence in the meaning of academic profession and its practice; but it is as well truth that every who work in higher education has something in common, which is, the work with the knowledge: researching and learning, analyzing, reconstructing, applying, communicating, evaluating and start all over again; definitively growing with the truth of science and make others growth (colleagues, students, society) as well.

The study reveals that understanding the teacher through his/her functions in institutions requires a deep and wide conceptualization of teaching and learning profession. Only then, one can come up with formative and evaluative process that can be strongly based and coherently linked toward the quality of academic role. By looking at Figure 1 one can easily note the different roles played by the teacher and express undoubtedly the teacher routine. So we can agree that could be used to establish some approach to our problem from some wider construct that could involve these characteristics and take us to a solid theory reference about academic profession. The integration of this theory is very limited in the current literature review.

Another key question related to new emerging role of academicians by the change in educative process traditionally understood as teacher oriented process (instruction) or, the more recent student oriented vision (teaching and learning), to the Interactive process where teacher and student have to learn together. *Sharing information*, *working with it* (analyzing), *making applications* and *reviewing all the process*. This means to break the Truth Property Myth of academics and the Ivory Tower Myth of the Institutions, because the information is everywhere and always increasing, so we could not pretend to live and survive academically only with our basic-postgraduate formation, what we really learn now and tomorrow it is how to keep learning along life (life long learning). In institutions we are not in a teaching-research community but essentially in an Always Learning Community. So we have to create a Permanent Learning Institutional Culture, what supposes teacher to really change (chip-change) deeply rethinking his own-personal position about the knowledge to open 'again' the door to new knowledge and increase the disposition to learn. Accepting that the truth is property of no one, all culture is property of humanity and history really, then, we are only workers and users of information and knowledge. From this critic realism (thinker humility) we can really go into the new era in academic role and education that makes the educative process based in a three concept relation: Knowledge Transmission, Knowledge Creation, Knowledge Services.It is well recognized today that all professions require more than just technical knowledge in order to be successful. To function successfully, professionals need specific competencies (McClelland, 1994). A search on the

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Psy INFO database (1990-2007) did not reveal much literature on competency models developed for academicians.

The society is the basic source of education demand but not in intuitive way only (i.e. the natural desire to educate the young generation) but is under influence of what happen in the world of work. The sources of jobs are a key factor in new demands of education and the institutions have to see carefully in society the role of faculty members and new conditions/characteristics of the present generation deeply influenced by technology development in information and communication.

II. MAIN MOTIVATION OF RESEARCH

1) Identify the competencies of the faculty members for the competitive enhancement of the educational institution.
2) Develop a competency model for the faculty members
3) Integrate the competencies and the job functions of the faculty member in the institution.
4) Extract the significant patterns from the competency database to help in succession planning and performance assessment.

III. REVIEW OF LITERATURE

Competency modeling is different from knowledge modeling. Knowledge modeling means knowledge life cycle modeling (Nonaka , Takeuchi , 1995) or knowledge contents and structure modeling (Houška ,Beránková , 2006, 2007). Organizations can model the competencies that will predict success in their operating environments by studying what current top performers do, more often and more effectively, for better business results. Most often the competencies that separate truly outstanding performers from merely adequate ones consist of behavior patterns based on aptitudes, knowledge, traits, and motivations (Gol-stein, 1995). A competency model (Harzallah, Vernadat, 2002) should describe:

1) Competencies required by a system,
2) Competencies acquired by individuals,
3) Competency resources structured into categories and subcategories,
4) Competencies defined in context,
5) Competencies necessary for achieving a specific goal.

Although this definition supposes descriptivism of the competency model, we believe that there is a necessity to distinguish between prescriptive, descriptive and normative models. Lepsinger and Lucia (1999) suggest that for best performance the competency model should not only identify the necessary skills and knowledge (descriptive model, competency map), but also define the expected outcomes of their performance (normative model). These outcomes are related to business objectives and strategies. The process of competency modelling, which shows the necessary competency, is a prescriptive model (Gray, 1999). Dalton (1997) points out that a competency model has to be constructed for the future, not for the present, because it is impossible to use when conditions change. Implementation

and validation of competency models is necessary for its proper application. Unvalidated competency model will neither adequately describe persons with appropriate attributes, nor will it be effective in meeting business goals. Mathematical competency modelling, System Theory and Operations Research/Management Science (OR/MS) modelling processes represent the scientific approach toward the complex organisational decision problems, such as the problem of best competency structure. From this point of view a competency model must be a normative model. Improving existing competency models and good designs for new competency models are the goals of this approach. Hollmann and Elliott (2006) propose a competency map (rather then a model), which describes how an individual can move beyond his or her current job posting. Mirabile (1997) introduces a descriptive competency model. Three ways of rating an employee's level of competence are used in this model:

1) Absolute rating scale – discrete rating with a description for each level,
2) Forced-distribution rating scales – absolute rating with limits, and
3) Paired-comparison rating based on pair wise comparison.

Review of literature proves that there is a significant gap in the study for the development of competence model for the education domain and seems to have a great contribution for the quality enhancement of the education sector.

IV. RESEARCH METHODOLOGY

The methodology adapted to design the system comprises of Phase I and Phase II.

Phase 1: Finding the key parameters needed for the assessment and evaluation of the faculty members across the verticals and developing a model to extract their competency score and generate a mathematical model for summing up the indicators.

Phase-II – Applying statistical techniques to the competency score to find employees technical performance, the hidden trends in their performances, the patterns of performances of the faculty members across various teaching learning process segments horizontally and finding the results.

V. PARTICIPANTS AND PROCEDURE

The study took the form of a survey, sent out to technical faculties from several reputable educational institutions in India. A total of 252 faculties, consisting of Lecturers, Senior Lecturers, Assistant Professors, Professors and Deans of the educational institutions, participated in the survey. The sample consisted of participants with varied educational and cultural backgrounds. These institutions are internationally recognized and have stringent selection standards. Thus, we can assume that majority of the faculties had an above-average academic background and work qualifications which exposed them to varied learning experiences. Overall, 98% of the participants in the sample have prior work

experience and the average age was of 28 years, thus indicating a certain level of exposure to the real life work scenario. Hence, allowing us to assume absence of completely unrealistic ratings of competency attributes.

VI. QUALITATIVE RESEARCH AND PILOT STUDY

Questionnaire on competency modeling for the faculty in educational institutions was developed through multiple focused group interviews with the faculty and deans of the educational institutions. The focused group interview data was analyzed by adopting content analysis technique. The content analysis has helped to develop a list of 52 attributes of competency for the educational domain. The question which is being asked in focused group interview was framed as "what are the attributes required for a good faculty for you? Kindly write ten attributes for a good teacher". A pilot study was conducted with 50 faculties of Sample Business School, India (name has been disclosed because of identity reasons). The original questionnaire consisted of 73 attributes to be evaluated for a good teacher. Based on mean analysis of the results and verbal feedback, least rated, redundant and repetitive items were deleted to reduce the length of the first section by 15 items. The new 58-item (see appendix) questionnaire was still quite long. However, deleting any more items would make it less comprehensive and may defeat the purpose of the study.

VII. MEASURES

The questionnaire used began with a brief introduction about the research study which specified that the researcher's interest in their perceptions of what they think the competent faculty should have. The survey was designed to make it as easy, convenient, less time-consuming and interesting as possible. The data was collected using the personal meet, focus group interviews.

The survey consisted of two parts: the first section gathers some simple demographic data like age, education, gender, teaching experience and other work responsibilities and so on, followed by the second section which consists of a list of competency attributes to be evaluated by the participant. This section entails attributes of the job itself as well as the personality, ability and skills aspect. The final questionnaire was consisting of 58 items which were chosen from the original pool of 73 items.

A 5-point scale ranging from 'Least Important' to 'Most Important' was used to study participants' assessments of individual attributes and values. On an average the survey took about 12-15 minutes to complete was gathered in the Likert Scale ranging from 1 (least important) to 5 (most important).

VIII. RESULTS

The conceptual scheme of the study consists of variables for the quality enhancement in the education sector and for the superior performance in the teaching and learning process and certain background details such as age, teaching experience, job responsibilities, gender, educational qualification etc.

The general statistics pertaining to the variables is appeared in Table 1. It describes the mean, standard deviations among the variables (N=252).

TABLE 1 GENERAL STATISTICS

Competencies	Variables	Mean	Std. Dev	Analysis N
Administration	VAR2	4.25	.43	252
Adult learning Understanding	VAR3	4.75	.43	252
AV Skill	VAR4	4.00	.71	252
Career Development Knowledge	VAR5	3.50	1.12	252
Coaching and Training	VAR6	4.75	.43	252
Compensation Benefits	VAR7	3.75	.83	252
Competency Identification skills	VAR8	4.25	.83	252
Computer Competence	VAR9	4.00	.71	252
Conflict resolution	VAR10	3.50	1.12	252
Counseling skill	VAR11	3.50	.50	252
Cost benefit analysis	VAR12	3.75	.43	252
Model building	VAR26	3.50	.87	252
Motivating	VAR27	3.25	1.09	252
Negotiation skill	VAR28	3.25	1.09	252
Networking	VAR29	3.00	.71	252
Objective preparation	VAR30	3.00	1.23	252
Operations subject materials	VAR31	3.00	.71	252
Organization behaviour	VAR33	3.75	.83	252
Organization Understanding	VAR34	3.75	.83	252
Performance observation	VAR35	3.50	.50	252
Personnel/hr field	VAR36	3.25	.43	252
Policies procedure	VAR37	4.00	.71	252
	VAR38	4.50	.50	252
Data reduction skills	VAR13	3.50	.50	252
Delegation skill	VAR14	3.25	.43	252
Facilities skill	VAR15	3.25	.43	252
Futuring skill	VAR17	4.00	.71	252
Government regulations	VAR18	3.75	.83	252
Group process skill	VAR19	3.75	.83	252

Human relations	VAR20	3.50	.87	252
Industrial relations	VAR21	3.25	1.09	252
Industry understanding	VAR22	3.50	.87	252
Intellectual versatility	VAR23	3.75	.83	252
Library skills	VAR24	3.50	.50	252
Marketing management	VAR25	3.25	1.09	252
Problem solving	VAR39	4.50	.50	252
Record management	VAR41	3.75	.43	252
Recruitment selection	VAR42	3.75	.43	252
Relationship versatility	VAR43	4.00	.71	252
Research skills	VAR44	3.50	.50	252
Social legislations	VAR45	4.00	.71	252
Specialized subject material	VAR46	4.50	.50	252
Team building	VAR47	3.75	.43	252
Education training development field understanding	VAR48	3.50	.50	252
Education, training and development techniques understanding	VAR49	3.50	.50	252
	VAR50	4.00	.71	252
Organization specific subject materials	VAR51	3.75	.43	252

Inter-item						
Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.4824	-1.0000	1.0000	2.0000	-1.0000	.1904

Reliability Coefficients   47 items

Alpha = .9786   Standardized item alpha = .9777

IX. DISCUSSION AND IMPLICATIONS

The present study is aimed to explore the relevance of the competencies from the industrial sector in education sector. It is hypothesized that implementation of the model developed with taking these competencies as basis will bring a drastic improvement in the overall performance in the faculty members of the educational institution. These competency model developed consists of personal effectiveness, ability effectives, skills effectiveness and the knowledge effectiveness aspect of competencies. Like any other organization, in the knowledge economy the educational institutions also have to transform their strategies for having the edge over their competitors. These competencies will enable not only the culture for the teaching but also the culture for the learning and development of the faculty members.

The current study provides the base for the competency model for the faculty members. In the future publications the authors will explore the relationships between the new roles of the faculty members and the competencies identified.

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