COMPETENCY MAPPING TO PREDICT EFFECTIVE ACADEMICS FROM HIGHER EDUCATION IN ASIA

Dyah Kusumastuti [1], Dewi Indriani Jusuf [2], Nirwan Idrus [3]

[1,2,3]International Women University, Bandung, Indonesia

[1]dyah.kusumastuti@iwu.ac.id, [2]dewijusuf16@gmail.com, [3]nirwan.idrus@gmail.com

Abstract. Competency mapping is one of the instruments for the management and development of HR Research. This research aims to map competency needs for academics who are useful in the tri dharma of higher education (Three Pillars of Higher Education comprising Education, Research and Community Service). The methodology used by establishing academic competencies derived from teacher law and lecturer number 14 in 2005 namely professional competence, personality competence, social competence and pedagogy competence, then through a sample of 100 academics who have a compelling performance from universities that have a reputation for quality. The research findings produce competency requirements for academics who perform excellently in Three Pillars of Higher Education can be categorized into four groups of competencies, namely self-managing, professional, social competence, and the implications of this finding are academic competencies can be built through intention /spirit, experience, and work situations. Building competency is not enough with training.

Keywords: Mapping Competency , academics development

I. INTRODUCTION

Education leaders in all countries must make fundamental changes in the way they engage their students, fellow faculty and community stakeholders in helping to map courses for and in developing people with the capacity to make the transition to a sustainable society. Strengthening academics competency for the sustainability of higher education organizations is critical because it can promote to educate, motivate and empower policymakers, leaders, and consumers and the community for lifelong learning (Kevany, K, 2007). Academics in tertiary institutions need to be competent to be able to continuously adjust to the existing dynamics developments such as demands on industry 4.0. In Indonesia, the task of academics expresses three pillars of higher education, namely to carry out teaching, research, and community service. Academics who are members of Knowledge Workers who work under a university organization as Knowledge Enterprise (Kusumastuti, 2017). Professional academics need to have competence following the needs of higher education organizations and the task of the three pillars of higher education; this will be the center of excellence of higher education as well as a means of competitiveness in realizing its potential. From surveys to several universities that have accreditation of higher education institutions with grade A, unfortunately, HR management, especially academics, is still administrative.

The HR in this research is that academics need to create value by increasing the performance and agility of talent (human capital) and culture (organizational ability) of the organization (Ulrich et al. 2012). This research is essential for human resource professionals because it empirically illustrates what it means to be a practical human resource professional. So that human resource professionals can identify strengths and adjust the behaviors needed. In a world of increasing change, complexity, and competitiveness, there has never been a greater need than human resources.

The concept of **Competency-Based Human Resources Management** (CB-HRM) offers a new approach that can accommodate the demands of organizational competency requirements in the needs of job competencies and individual competency needs. With CBHRM the process of functioning of human resources like [in Figure 1] will be more accessible, measurable, and fair.
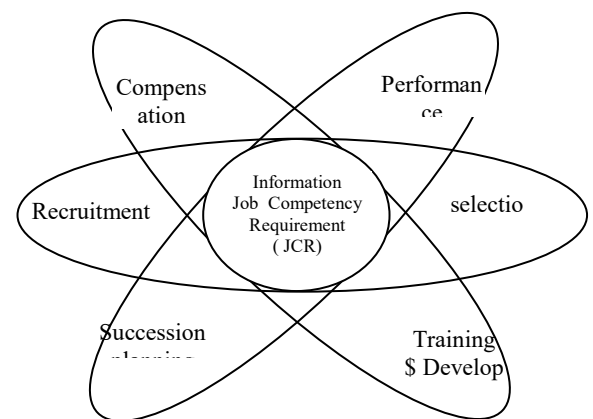
Figure 1 Integrated Uses of a Competency Database and human resources

This research aim at identifying competency needs as academics in higher education through self-management, professional, social competency groups, and planning & achievement.

II. BASIC THEORY

The theme is taken from within Spencer & Spencer regarding workplaces, defining competencies is a fundamental characteristic of an individual related to criteria referred to base on criteria and superior

performance in a work situation (Sanghi, S, 2007). 'Fundamental characteristics' means that competence is a reasonably deep and lasting part of one's personality and can predict behavior in various work situations and tasks. 'Relaxing' means that it causes or predicts behavior and performance.' Referenced reference-criteria' means that competence predicts who is oing something good or bad, as measured by specific criteria or standards.

There are five types of competency characteristics. Motives is things that are consistently thought or desired by someone and what causes action. Motives' direct, direct, or choose' behavior towards specific actions or goals and away from others. Characteristics is physical characteristics and consistent responses to the situation or information. Self-concept is a person's attitude, values, or self-image. Attitude is Probing experience impression various assess through Psychometric tool. Knowledge is information that someone has in a particular content field, such as education record experience and knowledge able to see and assess. Skills is the ability to perform specific physical or mental tasks, able to assess from experience can be tested empirically.

The term "competency" was first introduced in the 1970s by David McClelland (Boyatzis, 1982; Spencer and Spencer, 1993; Spencer et al., 1994). The competency model consists of knowledge, skills, abilities and other characteristics needed for effective performance in the job position (Pickett, 1998; Lucia and Lepsinger, 1999; Shippmann et al., 2000; Rodriguez et al., 2002; Martone, 2003; Hollenbeck et al., 2006; Levenson et al., 2006; Catano et al., 2007; Vito and Taylor, 2012; Sutton and Watson, 2013; Long et al., 2013). Campion et al. (2011) emphasize that competency models are essential innovations that help organizations focus on job-related information and personnel skills to manage employees. Parry (1996) and Olesen et al. (2007) state that this model seeks to separate high-performance from average performers. The concept of competence has many sides, but with one general factor: competence aims to improve the performance of individuals in the workplace (Hoffman, 1999). Employee competencies influence HRD interventions for OE (Potnuru and Sahoo, 2016). Lo et al. (2015) distinguish between strategic and functional HR competencies and believe that strategic HR competencies are superior to functional HR competencies for successful performance in the HR domain. Veliu and Manxhari (2017) concluded that the relationship between independent managerial competencies was observed to be significantly significant for business performance. Young and Dulewicz (2009) advocated an approach to leadership selection and development by identifying four "supra competency" clusters related to high performance in the British Navy. (Halabí et al.)

1. What is competency?

According to Spencer and Spencer (1993), in his book "*Competence at work definition of competency is an underlying characteristic of an individual that causally related to criterion referenced effective and/or superior performance in a job or situation*".
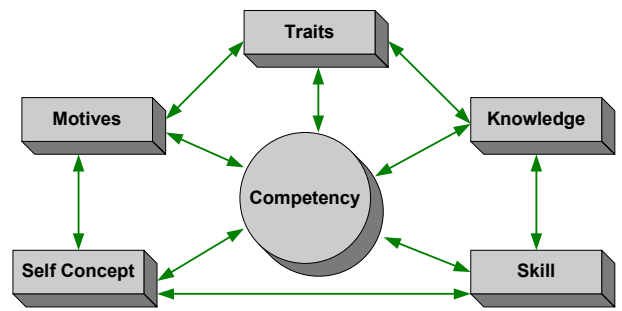
Figure 2. Five types of competency characteristics: Competency Individual Concepts
(Adopted: Spencer and Spencer 1993)
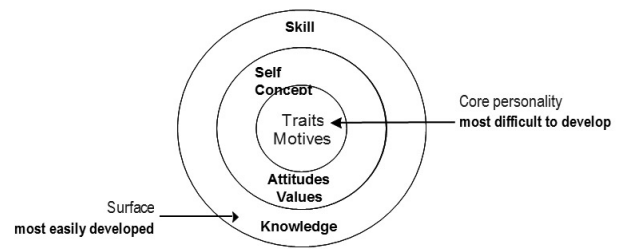
Figure 3. Central and Surface Competencies
(Adopted: Spencer & Spencer 1993)

a. Motives. The things a person consistently think about or wants that cause action. Motives drive, direct and select behavior toward specific actions or goals and away from others

b. Traits. Physical characteristics and consistent responses to situations or information.

c. Self-concept. A person's belief that he or she can be useful in almost any situation is part of that person's concept of self. Example: self-confidence a person 's belief that he or she can be useful in almost any situation is part of that person's concept of self

d. Knowledge. Information, a person, has in specific content areas

e. Skill. The ability to perform a specific physical or mental task

Competency, skill, and knowledge are visible from the surface, both types of characters are relatively easy to be developed by training and experience, but characteristic, motives, and self-concept are individual and personal which are challenging to develop as it is time-consuming.

2. Causal Relationships

Motives, trait, and self-concept competencies predict skill behavior actions, which in turn predict job performance outcome. As in the motive/trait >behavior > outcome causal flow model shown as figure.

Competencies always include an intent, which is the motives or trait force that causes action toward and outcome. Behavior without intent does not define competency. An example is "management by walking around". Without knowing why a manager is walking around; you cannot know which, if any, competency demonstrates. The manager's intent could be boredom, leg

cramps, the monitoring of work to see if the quality is high, or a desire to be visible to the troops.
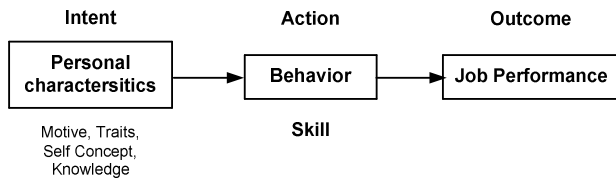
Figure 4. Competency Causal Flow Model
(Spencer& Spencer 93)

The above model states that it is values, mission, personal philosophy, knowledge, competencies, life stages and career, interests, and styles that describe one's talents. For work, it is the role of responsibility and tasks that must be done. Culture and climate, structure and systems, strategic organizational positions, and advanced life stages formulate the organizational environment.

There are six clusters of competencies that differentiate outstanding from average performers in many countries of the world (Bray et al., 1974; Boyatzis, 1982; 2006a, b; Kotter, 1982; Thornton and Byham, 1982; Luthans et al., 1988; Howard and Bray, 1988; Campbell et al., 1970; Spencer and Spencer, 1993; Goleman, 1998; Goleman et al., 2002). They are: (1) Cognitive intelligence competencies: – Systems thinking: seeing a situation as having causal events and perceiving the flow of information, people, or goods within an organization, community, or society. – Pattern recognition: seeing themes or patterns in seemingly random events. (2) Emotional intelligence competencies: – Emotional self-awareness: knowing one's own emotions and recognizing their impact. (3) Self-management competencies: – Emotional self-control: inhibiting disruptive emotions and impulses for the benefit of others. – Adaptability: flexibility in adapting to changing situations and handling ambiguity. – Achievement orientation: the drive to improve performance to meet inner standards of excellence. – Positive outlook: having a positive outlook on people, events, and the future. (4) Social intelligence competencies. (5) Social awareness competencies: – Empathy: understanding others' emotions, perspectives, and taking an active interest in them. – Organizational awareness: Reading the currents, decisions networks, and politics at the organizational level. (6) Relationship management competencies: – Inspirational leadership: guiding and motivating with a compelling vision. – Influence: using a range of tactics for persuasion. – Coaching and mentor: developing others' abilities through feedback and guidance. – Conflict management: resolving disagreements constructively. – Teamwork: cooperation and team building. Competencies are a behavioral approach to emotional, social, and cognitive intelligence (Boyatziz Richard, E. 2009).

Competencies and intelligence as behavioral manifestations of talent While other interpretations of "intelligence" offer in the literature, Boyatzis and Sala (2004) claimed that to be classified as "an intelligence," the concept should be: behaviorally observable. Related to biological and in particular neural-endocrine functioning. That is, each cluster should differentiate as to the type of neural circuitry and endocrine system involved, related to life and job outcomes. Sufficiently different from other personality constructs that the concept adds value to understanding the human personality and behavior; and . the measures of the concept, as a psychological construct, should satisfy the essential criteria for a sound measure, that is show convergent and discriminant validity (Campbell and Fiske, 1968).

III. METHOD

To identify jobs = JCR competency requirements (Competency requirements for academic positions carried out with surveys through Likert-shaped competency questionnaires including four competency groups consisting of 14 competencies which include:

Table 1 .

Competency Dictionary

1. Self Management:	2 Planning and Achievement	3.Social	4. Profesioanl
Self Awareness	Achievement Orientation	Building Effective Team	Intellectual Acumen
Self Developmenmt	Planning & Organizing	Net Working	Communication
Creative Thinking	Problem Solving	Inspiration Leadership	Service Oriented
		Organization Awareness	Developing Others
			Professional Services
			Digital Learbing Methods

Each Competency has a narrative definition and competency level consist of 3 level behavioral indicators of demonstrating the competency in the job, yang mana setiap level dibedakan secara Just Noticeable difference (JND) Competency scales (Spencer , 2008).

The sample selected from 95 academics from various universities who have accreditation for Higher Education and also register with QS and World ranking in Asia and academics has performance in tri dharma (effective teaching-learning, research and professional services (PS) to the community. From the point of view lecturer's functional position, has research and the number of journal publications, books above two every year and periodic professional service every year. The effective performance of these academics follows the statistical concept that individuals who perform above average are in the graph of the normal +1 Standard Deviation distribution (1 SD) or in a performance worth up to 120%. The model describes below:

Job Complexity INCREASED Productivity (Low +19% = 119%, Average Moderate +32% = 132%)
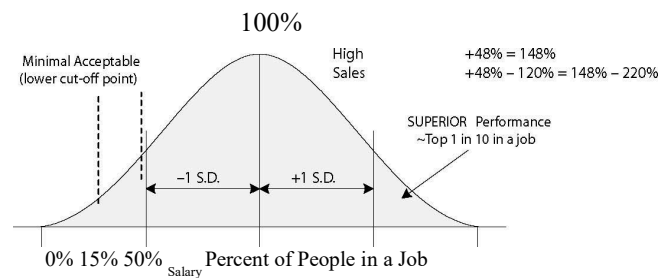

Figure 5 . Economic value added by superior (+1 SD) performance

IV. RESULT

Competency level results for 16 competencies:

Responden	SA	SD	ACH	PL	PSL	CR	ORGA	LS	CM	TW	NW	SRO	DVO	INAC	TPG	PRF SERVS
1	2	3	3	2	3	3	3	3	2	3	2	3	3	3	3	3
2	2	3	2	2	3	3	3	3	3	2	3	3	2	3	3	3
3	2	2	2	2	3	3	2	3	3	3	3	3	2	3	3	3
	2	2	2	2	3	3	2	3	2	3	3	3	2	3	3	3
	2	3	2	2	3	3	2	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	2	2	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	2	2	2	3	3	3	2
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	2	2	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	2	3	3	3	2	3	2	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	2	2	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	3	3	2	2	3	2	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	2	3	3	3	2	2	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	2	3	3	3
	2	2	2	2	3	3	3	3	3	2	3	3	3	3	3	2
	2	2	2	3	3	3	3	3	3	2	3	3	3	3	3	3

Responden	SA	SD	ACH	PL	PSL	CR	ORGA	LS	CM	TW	NW	SRO	DVO	INAC	TPG	PRF SERVS
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	2
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3

Responden	SA	SD	ACH	PL	PSL	CR	ORGA	LS	CM	TW	NW	SRO	DVO	INAC	TPG	PRF SERVS
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	2	2	3	3	3	3
	2	3	2	2	3	3	3	3	2	2	2	2	3	2	3	2
	2	3	2	2	3	3	3	3	3	2	2	2	3	3	3	2
	2	3	2	2	3	3	2	3	3	2	3	2	3	3	3	2
	2	3	2	2	3	3	3	3	3	2	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	2	2	2	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	2	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	2	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	2	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	2	3	2
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	2	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	2	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	2	3	2	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	2
	2	2	2	2	3	3	3	3	3	3	2	3	2	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	2	2	2	3	3	2	3	2	3	3	3	3	3	3	3
	2	2	2	2	3	3	3	3	3	2	2	2	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3
	2	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	2	3	3	3	3	3	3	3	3	3	3
	2	3	2	2	3	2	3	3	3	2	3	3	3	3	3	2

The results of data processing with statistics by calculating the frequency of the number of competency levels that were most chosen by respondents the level of competency popularly answered by respondents show in the table below:

1. Self-Management:	Alpha)	Statistic Result Mode / Competency level frequency	Description of Competency behavior
Self-Awareness (SA)		Level 2	Realize he or she-self to be called to continue to master science
Self-Development (SD)		Level 3	he or she proactively looking for institutional opportunities outside the institution
Creative Thinking)CT(		Level 3	Creating benefits as opportunities for learning & research findings to improve people's quality of life
2 Planning and Achievement .			
Achievement Orientation(AO)		Level 2	Inspire/motivate to achieve high academic standards
Planning & Organizing PO		Level 3	Synergizing teaching, research, and service in an interdisciplinary manner.
Problem Solving PS		Level 3	Prepare steps to alleviate any problems.
3.Social Competencies			
Building Effective Team BET		Level 2	Collaborate to build interdisciplinary research.
Networking (NW)		Level 3	Build networks with other organizations and keep up to date on research keep on update information in the international research community.
Memimpin & menginspirasi orang lain (LI)		Level 3	To guide students's performance or other people by giving responsibility
Organization Awareness (OA)		Level 3	Actively conduct programs for the image of the university.
4. Professional			
Intellectual Acumen)IA)		Level 3	Make a formula to solve complex problems.
Communication CM		Level 3	Promote open communication and still be prepared to accept the bad news.
Service Oriented SO		Level 3	He or she turns Competency into an engaging, research & professional learning service.
Developing others DO		Level 3	Become a mentor, provide training and assignments that challenge and force the mobilization of one's knowledge and skills.
Profesional ServicesPRS		Level3	he or she creates the use of mastered knowledge to enhance economic and social development.

V. CONCLUSION

Universities around the world face increasing competition in student admissions and funding. To overcome these challenges, Britain and Australia as a role model university, create autonomy to operate in an increasingly deregulated market environment (Bradley, 2016). Lecturers have a strategic role in the sustainability and innovation and reputation of universities, mapping the competency needs of lecturers to face the future must be used as a basis for CBHRM and an appropriate framework to enable universities to change their current transactional human resources as a system that strategically shapes the reputation of the university. Often academics prioritize routines struggling with their discipline rather than improving University performance. The reputation of the university depends on costs, which are essential factors that influence the choice of prospective students. By identifying the standards of academic competency requirements, individual performance to the university will improve success to achieve, and the CBHRM process will be measured. Such as training needs for academics will be more appropriate, namely by identifying competency gaps between individual academics (People Competency) and standards of competency requirements (JCR), as well as the recruitment process, selection, career, Performance appraisal, and Compensation (Pay for Competence). The CBHRM process implemented with JCR and PC information (people Competency) will be more straightforward, transparent, and not discriminatory or biased.

From the findings above, there are 16 competencies with levels between 2 and 3, such as the competence of Self-Awareness, Self-Development, Creative Thinking, and Cetera. It can use as a standard for the management of academic management.

ACKNOWLEDGMENT

REFERENCES

Berger, L. A., & Berger, D. R. (2003). The talent management handbook: Creating organizational excellence by identifying. Developing & Promoting Your Best People.

Boyatzis Richard, E. (2008). Competencies in the 21st century. *Journal of Management Development*, 27(1), 5-12. doi:10.1108/02621710810840730

Boyatzis Richard, E. (2009). Emotional, social and cognitive intelligence competencies distinguishing effective Italian managers and leaders in a private company and cooperatives. *Journal of Management Development*, 28(9), 821-838. doi:10.1108/02621710910987674

Bradley, A. P. (2016). Talent management for universities. *Australian Universities Review*, 58(1), 13-19. Retrieved from https://eprints.qut.edu.au/114684/

Dreyfus Christine, R. (2008). Identifying competencies that predict effectiveness of R&D managers. *Journal of Management Development*, 27(1), 76-91. doi:10.1108/02621710810840776

Kevany, K. (2007). Sustainability: new insights for education. *International Journal of Sustainability in Higher Education*, 8(2). doi:10.1108/ijshe.2007.24908baa.001

Kusumastuti (2017) People Behaviors for Knowledge Management System (KMS) Application in Higher Education : a Study at a University Gained Award form make (most admired knowledge enterprise)". IJECM *International Journal of United Kingdom* ; Vol V Issue 10 ; ISSN 2348-0386

Perera, S., Babatunde, S. O., Zhou, L., Pearson, J., & Ekundayo, D. (2017). Competency mapping framework for regulating professionally oriented degree programmes in higher education. Studies in Higher Education, 42(12), 2316-2342. doi:10.1080/03075079.2016.1143926

Sanghi S, 2007 The Handbook of Competency Mapping, Understanding, Designing and Implementing Competency Models in Organizations, Second Edition Sage Publications Ltd, 1 Oliver's Yard, 55 City Road, London EC1Y 1SP

Shet Sateesh, V. (2019). Competency based superior performance and organizational effectiveness.

International Journal of Productivity and Performance Management, 68(4), 753-773. doi:10.1108/IJPPM-03-2018-0128

Spencer, L. M., & Spencer, P. S. M. (2008). Competence at Work models for superior performance. John Wiley & Sons.

Ulrich, D, Younger, J, Brockbank, W, Ulrich, M, (2012),"HR talent and the new HR competencies", Strategic HR Review, Vol. 11 Iss, 4 pp. 217 – 222, http://dx.doi.org/10.1108/14754391211234940