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THE PRACTICE OF COMPETENCY MODELLING WITHIN THE CONTEXT OF HUMAN RESOURCE DEVELOPMENT

In this article are studied the development of competencies and competency models by reviewing and integrating the literature on competency modeling. As a field of study selected by basic competencies targeted engineering specialties, and their impact on the development of labor potential.

У статті вивчається розвиток компетенцій та їх моделей за допомогою аналізу та літературного огляду з компетентнісного моделювання. В якості області дослідження обрані базові компетенції цільових інженерних спеціальностей та їх вплив на розвиток трудового потенціалу.

В этой статье изучается развитие компетенций и их моделей с помощью анализа и литературного обзора по компетентностному моделированию. В качестве области исследования выбраны базовые компетенции целевых инженерных специальностей и их влияние на развитие трудового потенциала.

Keywords. Competencies, Competency modeling, Job analysis, Human Resources Development, Employers satisfaction.

Ключові слова. Компетенції, Моделювання компетенцій, Аналіз роботи, Розвиток людських ресурсів, задоволення потреб роботодавців.

Ключевые слова. Компетенции, Моделирование компетенций, Анализ работы, Развитие человеческих ресурсов, удовлетворения потребностей работодателей.

Introduction. As an alternative to traditional job analysis, the practice of competency modelling may be useful to managers of human resource development (HRD) to serve as the foundation for many HRD activities.

Asymmetry in economic and social development, instability in its broadest sense, resocialization relationships in the labor sphere, reduced social cohesion, the spread of social exclusion — all these trends, the reality of the new century. And this, again emphasize, it turns out is not the main paradox of our time [1].

Developing human resources, which accumulate the functions of education, science and technological development, required to satisfy the creative needs of knowledge-based society in all spheres of life and to create the conditions for realizing the principle of life-long education.

Various institutions and organizations should be involved in the development of HR to perform the functions relating to education, process of studying and research, professional training and consulting, as well as various enterprises and organizations where people work and gain the experience and competence in various fields [6, 18].

Complex systems for developing human resources (HR) should be aimed at satisfying the needs of creating knowledge-based economy. The main features of this system are following.

— Development of HR should be perceived as a continuous complex process embracing a number of processes relating to education and studies of one's professional skills in various areas, carrying out research, individual and group analytical and design work, acting as executor or manager, increasing the competence and skills of acquiring various types of knowledge;

— Development of HR is based on the life-long education' principle, implying that every person can have an opportunity to improve skills to satisfy the requirements of the developing economy, social life, science and technology;

— Development of HR should be the formation of the creative potential for creating the conditions for developing constructive visions;

— Development of HR should be oriented at international priorities, therefore, institutions and organizations involved in the process should operate as international cooperation.

In 1973 was publication McClelland's work that introduced the modern notion of competencies. McClelland acknowledged the critical role that a detailed analysis of the work to be performed should play in developing competencies. To know what effective performance is, he noted, one is

required to find out what an individual actually does through a «careful behavioural analysis of the outcomes» and the tasks an individual completes [11]. Although McClelland's [12, 11] work has had much influence on the development of competency modeling, two related areas of research must also be acknowledged for their contributions: understanding and assessing managerial performance; and the development of core competencies at the organizational level [15]. First, the process of understanding and assessing managerial performance has provided possibility for thought in terms of competencies, rather than tasks. The work of managers and typically involves more «soft» (i.e., interpersonal) skills, fewer directly observable behaviours, and requires more adaptability in response to changes in the internal and external environments. Such complexity tends to preclude the use of traditional job analysis, which is often task- or activity-focused [17].

Instead, researchers began to develop alternative methodologies, including the critical incident technique [4] and the related behavioural event interview [2], to consideration of behaviour based dimensions of managerial and supervisory performance.

Competencies remain popular and continue to form the basis for a wide range of human resource development (HRD) activities, such as assessment centres [3], employee development and training [16], career development [7], leadership development [14], managing organizational change, competency typology [10].

Despite the potential appeal among HRD scholars and practitioners, however, there has been little examination of what competencies are, how they should fit into a competency model, and what the best practices for developing that model ought to be.

Research Aims. Aim of research is to identify the knowledge, skills and competence in engineering, required the labor market and description of trends, design tool for predicting, identification of gaps in specific skills and social competencies.

Development of an integrated educational Training LLL Programme within the Project TEMPUS ««ICo-op»: Industrial Cooperation and Creative Engineering Education based on Remote Engineering and Virtual Instrumentation (530278-TEMPUS-1-2012-1-DE-TEMPUS-JPHES)» should include both the demands of regional labour markets and profile professional degree programs of the partner universities.

Results of the research. We consider issues related to the definition of conceptual clarity determine competence. First, have are the differences in whether a competency should represent some combination of knowledge, skills, abilities, and other characteristics or is more accurately thought of as a behavioral measure or capability. The second aspect pertains to the breadth of what is included in a competency. While some argue for basic knowledge, skills, and abilities [13], others advocate broader conceptualizations, including motivation, beliefs, values, and interests [3, 5], or motives, traits, self-concepts, attitudes, and values [20]. Finally, the definitions tend to differ in the degree to which they explicitly acknowledge the differentiating potential of competencies for high performers [13], or as being merely useful in achieving work objectives [8]. The differences noted above led Schippmann et al. to conclude that the term competency may have «no meaning apart from the particular definition with whom one is speaking» [19].

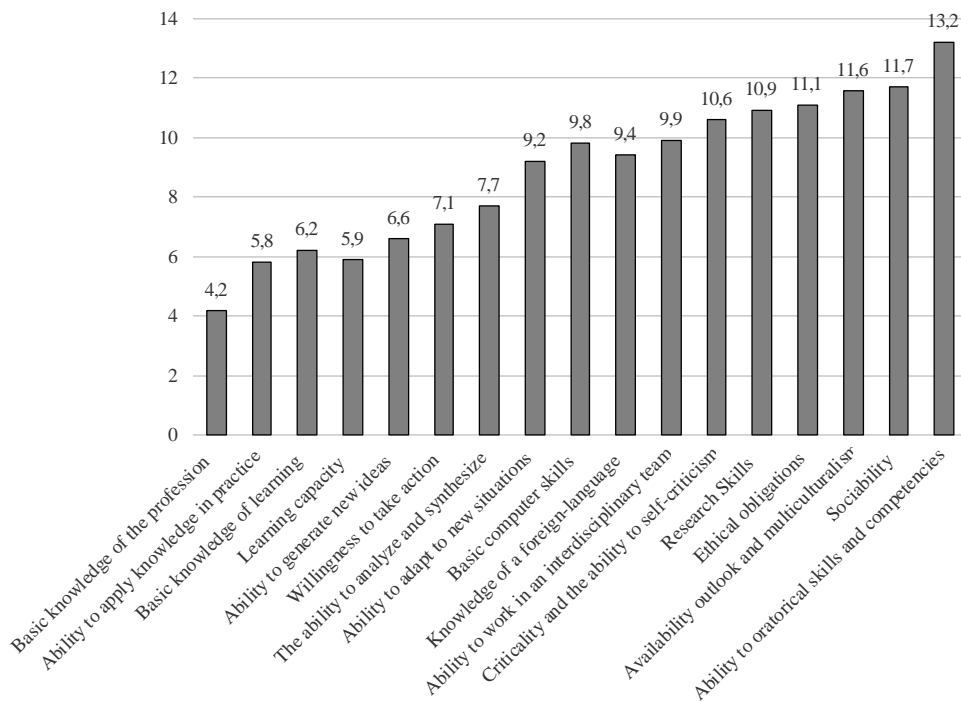


Figure 1. Importance of competence: level of employers dissatisfaction

Criteria involved: competency modeling best practices or current practices, either from a scientific or applied perspective; competency models applied to a wide range of organizational activities (e.g., human resource development, selection, training, assessment); and conceptual or review articles focused on definitional issues related to competency modelling, including typologies.

The survey involved 112 employers (survey on 1-4 questionnaires), 66 teachers (of which 36 teachers took part on 2-4 questionnaires, 30 teachers on the fifth questionnaire) and 105 students (undergraduates and postgraduates, participated on 2 — 4 questionnaires).

The survey also took part employers from organizations with different number of employees including research, service, businesses, etc.

Results on «Basic knowledge of the profession» considered as the highest and the lowest — the results on «Ability to oratorical skills and business communications» (Fig. 1):

The results of The identification of specific competences of knowledge for enterprises are presented in Figure 2.

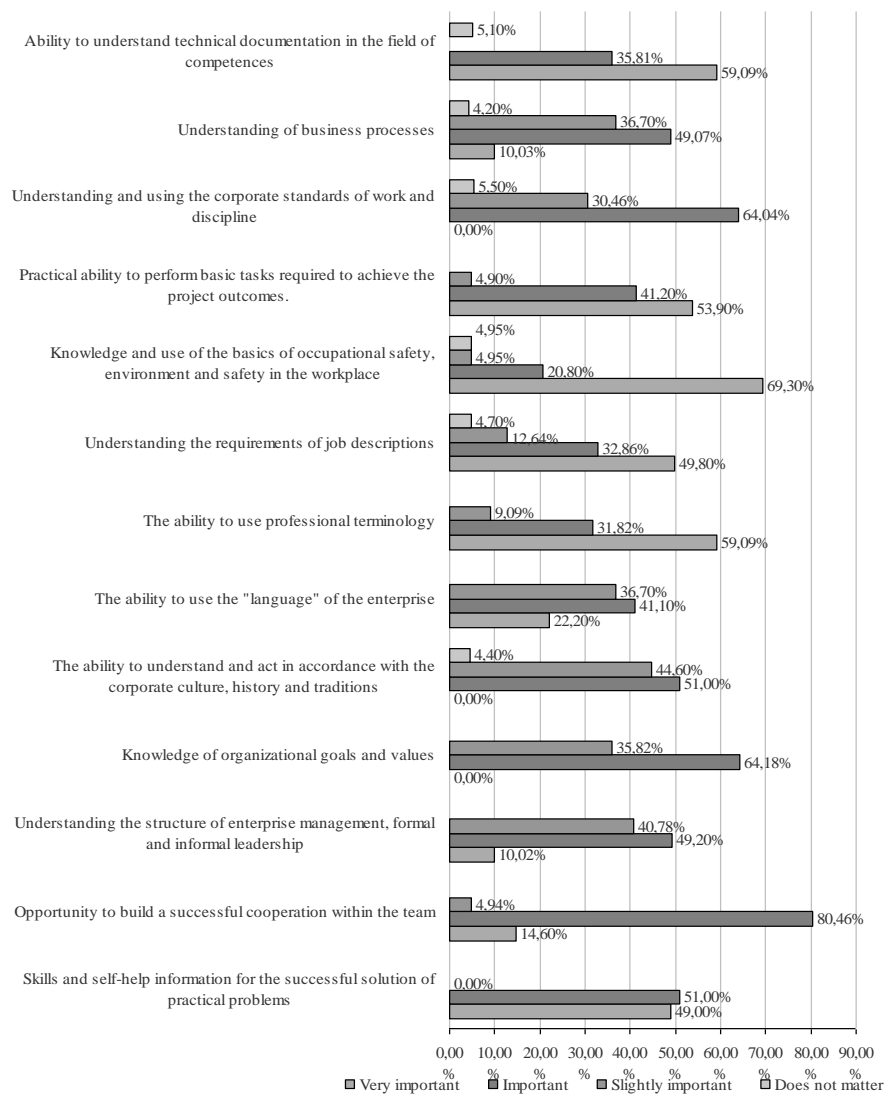


Figure 2. Specific competences of knowledge for enterprises

Fig. 3 shows the results of the difference between the mean values of «importance» and «level, which provides having a higher education».

Key benefits for enterprise from cooperation with the university are presented in Figure 4.

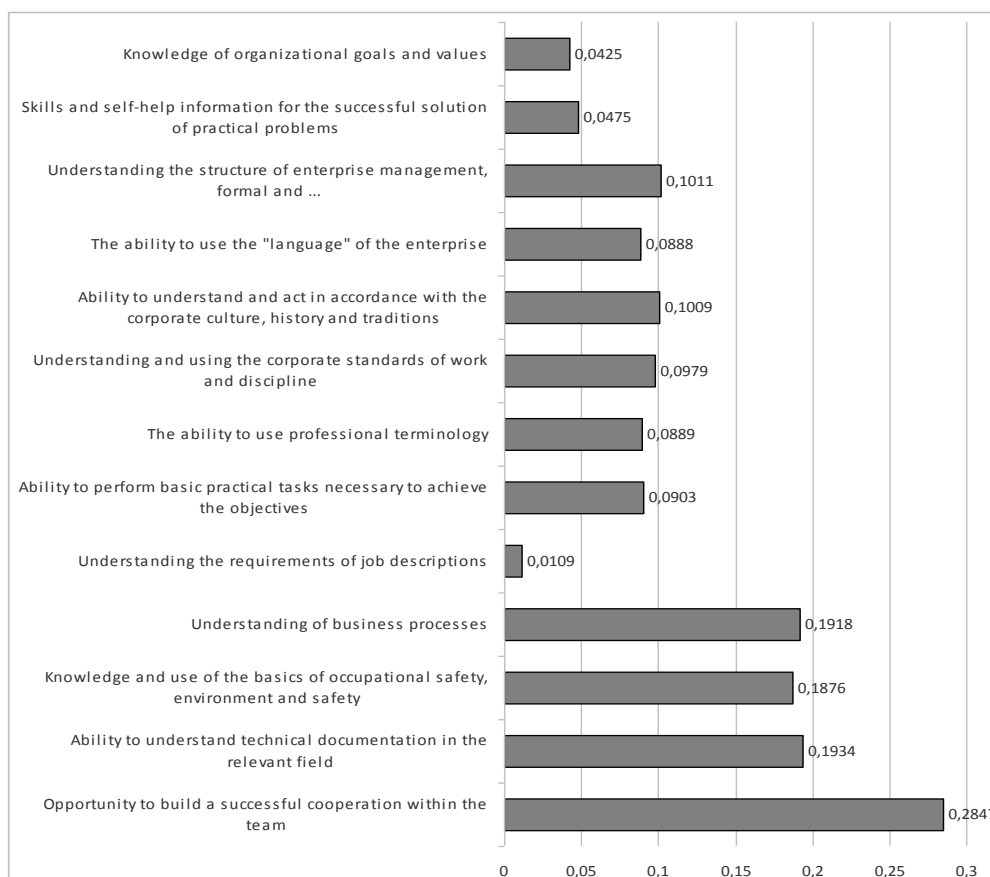


Figure 3. Gap University education — enterprise

Employers believe that cooperation with the University «Enables to realize the function of staff development» — 30.19 %, «Allows to increase efficiency — 26.42 %.» «Allows faster implement innovations» and «Increases profitability» of cooperation with the University find profitable respectively 11.32 % and 13.21 % of Employers. None of them did not believe that cooperation with the University «Lets to get access to the new markets» (0 %).

Two main groups of competencies have been identified that a person, involved in any professional activity, should possess: personal, social-ethical, responsible for the behaviour of a person as an individual in a social environment; professional, describing the compliance and correspondence of a person to a certain professional activity (science, engineering, etc.).

There is a possibility to identify a special group of additional competencies that are indirectly related to the profession of a person, but the composition of this group can be formed only by experts for every type of activity and it does not bear a systematic nature.

Within each type of competences one can identify certain competencies, which are relevant to the professional sphere chosen by the partner universities.

Conclusions. The urgency to implement remote laboratories and usage of innovative Training programs (including distance ones) is determined by the uneven distribution of regions' scientific-technical potential. That is why it is very important to learn and gain experience of the remote laboratory creation and exploitation in the European partner-countries.

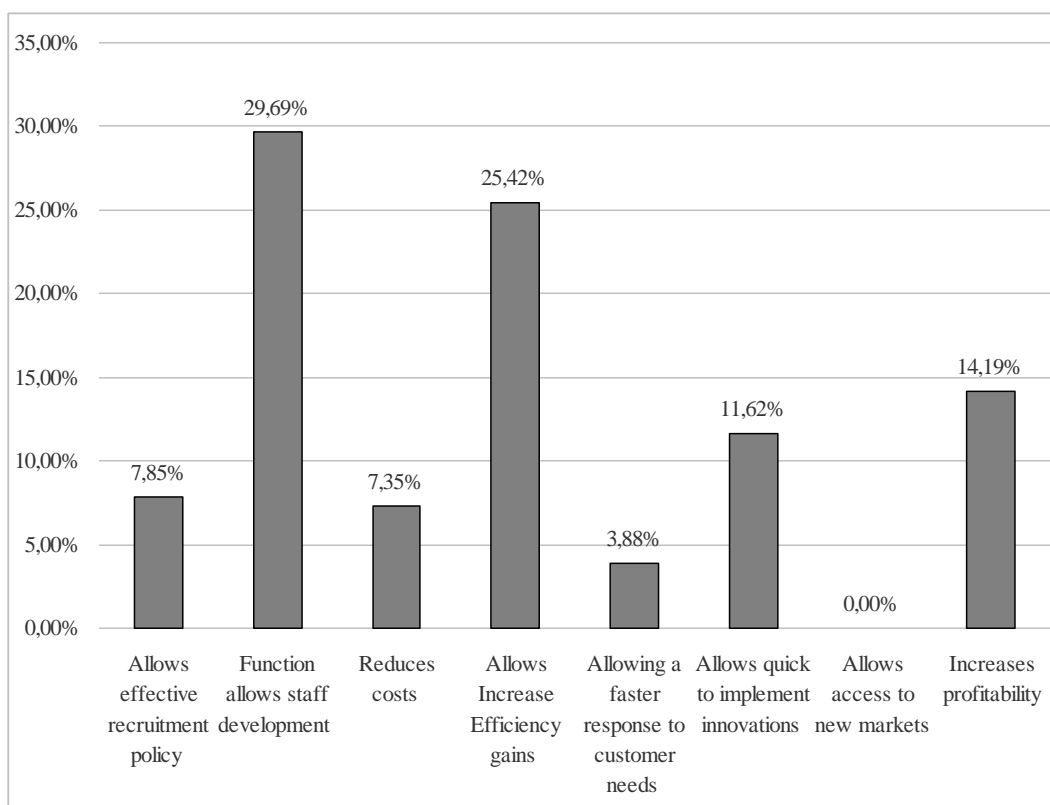


Figure 4. Key benefits for U2B cooperation

Although traditional job analysis has been positioned as a foundational activity within human resources and organizational development, its applicability to the changing environment of business appears to be limited.

An increasing attention is paid to on strategy of development personnel and human capital as a competitive advantage (Sanchez & Levine, 2012). Popular alternative emerged in the form of competency modelling, which offers several benefits to managers and HRD professionals in particular — serving as the foundation on which training and development programs can be created to encourage superior performance while maintaining a strong link to the overall strategy and direction of the organization. Examining the application of competencies, through competency modelling (and most frequently in contrast or opposition to job analysis), reveals that one must explicitly consider the purposes and goals of the competency model, which drive choices about methodology and implementation (e.g., worker vs. task focus, prescriptive vs. descriptive approach).

Rapid development of information technologies leads to the necessity of constant updating of the curriculum content. Hence, there is a need for joint development of formation system competences of both basic and additional (professional) university programs.

The competence-based approach helps to evaluate the quality of education. Professional functions performed by specialists can be formulated as knowledge and skills received by students. As a result a matrix of competencies is formed.

References

1. Колот А.М. Дослідження взаємозв'язку соціального і економічного розвитку як складової «переформатизації» економічного мислення / А.М. Колот // Соціально-трудові відносини: теорія та практика: зб. наук. праць. — 20126. — №1 (3). — С. 5 — 10.
2. Boyatzis, R. E. (1982). The competent manager: A model for effective performance. New York, NY: Wiley-Interscience. Bray, D. W. (1982). The assessment center and the study of lives. *American Psychologist*, 37, 180-189.
3. Chen, H.-C., & Naquin, S. S. (2006). An integrative model of competency development, training design, assessment center, and multi-rater assessment. *Advances in Developing Human Resources*, 8, 265-282.
4. Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51, 327-359. Fleishman, E. A., Wetrogan, L. I., Uhlman, C. E., & Marshall-Mies, J. C. (1995). Knowledges. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, & E. A.
5. Fleishman (Eds.), Development of prototype occupational information network content model (Vol. 1., pp. 10.1-10.39). Salt Lake City: Utah Department of Employment Security (Contract Number 94-542).

6. Friedman, T.L. (2005), *The world is flat: the globalized world in the twenty-first century* — London, Penguin books, 660p.
7. Gfroerer, M. (2000). Career guidance on the cutting edge of competency-based assessment. *Journal of Career Development*, 27, 119-131.
8. Green, P. C. (1999). *Building robust competencies*. San Francisco, CA: Jossey-Bass.
9. Gregory W. Stevens. A (2013) «Critical Review of the Science and Practice of Competency Modeling», *Human Resource Development Review*, 12(1) pp. 86–107.
10. Le Deist, F. D., & Winterton, J. (2005). What is competence? *Human Resource Development International*, 8, 27-46.
11. McClelland, D.C. (1973). Testing for competence rather than «intelligence.» *American Psychologist*, 28, 1-14.
12. McClelland, D.C. (1994). Identifying competencies with behavioral-event interviews. *Psychological Science*, 9, 331-339.
13. Mirabile, R.J. (1997, August). Everything you wanted to know about competency modeling. *Training and Development*, 51(8), 73-77.
14. Naquin, S.S., & Holton, E. F. (2006). Leadership and managerial competency models: A simplified process and resulting model. *Advances in Developing Human Resources*, 8, 144-165.
15. Prahalad, C. K., & Hamel, G. (1990, May-June). The core competence of the corporation. *Harvard Business Review*, 79-91.
16. Rothwell, W. J., & Lindholm, J. E. (1999). Competency identification, modeling, and assessment in the USA. *International Journal of Training and Development*, 3, 90-105.
17. Sackett, P. R., & Laczko, R. M. (2003). Job and work analysis. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Handbook of psychology* (Vol. 12, pp. 21-37). Hoboken, NJ: Wiley.
18. Savchenko O., Somosi M., Nesterenko R., (2010) Intuition changes in international labor market and human resource management. *Формування ринкової економіки: зб.наук. праць.– 2010/КНЕУ, Київ. — с.160-168*
19. Schippmann, J. S., Ash, R. A., Battista, M., Carr, L., Eyde, L. D., Hesketh, B., ... Sanchez, J. I. (2000). The practice of competency modeling. *Personnel Psychology*, 53, 703-740.
20. Spencer, L. M., McClelland, D. C., & Spencer, S. (1994). *Competency assessment methods: History and state of the art*. Boston, MA: Hay-McBer Research Press.
21. Swanson, R. A. (2001). Human resource development and its underlying theory. *Human Resource Development International*, 4, 299-312.

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