Chapter 8

The Analysis of Degree of Formation of Competences on the Basis of Model of the Expert and Cluster Approach

Sergey Kataev  
Tomsk State Pedagogical University, Russia

Zoya Skripko  
Tomsk State Pedagogical University, Russia

Ekaterina Alekseeva  
Tomsk State Pedagogical University, Russia

ABSTRACT

New approach to integrated estimation of graduates is considered in this chapter. Control of knowledge of the graduate of institute is important part in the course of training and the more so, for E-Learning systems. It provides feedback between training and the trainee in traditional form of education and between the trainee and system of training in E-Learning. The expert’s model described in terms of competences and the being base of this approach, allows to estimate the university graduate integrally. Besides, the model of the expert is considered as the tool for realization of feedback. Numerical estimation of degree of formation of competences was carried out within the developed indicator method. The concrete results of the researches conducted by authors illustrating the offered approach are given in the head. As logical development of this integrated approach possibility of inclusion of concepts of Meta concreteness in estimated base is considered.

INTRODUCTION

The system of technical and natural-science education based on formation of knowledge, skills is directed by all techniques of training and way of estimation on training of the graduates possessing defined a set of knowledge, skills. The binding to concrete specialty is carried out, mainly, by selection of a certain set of the studied disciplines. This approach had a number of undoubted advantages, and in economy of...
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the Soviet Union such form was sufficient and quite effective, considering mainly distributive system of graduates and rather preferential conditions for their adaptation on a new workplace. In modern Russia employers need people the most suitable for work on this specialty. Existence only of knowledge at the graduate doesn’t serve in the real conditions for the employer as a guarantee of his effective work anymore.

The employer sees on each place there is nobody the ideal expert possessing the necessary set of qualities. In this plan transition to estimation of the graduate by means of competences means recognition of the specialist person by the many-sided personality, recognition of need to form this versatility. To form is means, in particular, and to be able to estimate result of training and education. In this plan transition to system of estimation by means of competences is represented a natural and logical step. And it is besides natural that this new step led to emergence of a set of problems. For example, how to determine the level of formation of competences that it is necessary to do to improve quality of this or that competence and whether it is possible to make it, remaining within state standard in pedagogical higher education institution. The feedback mechanism by means of which it is possible to trace formation of competences is necessary for the solution of these problems that, in turn, gives the chance to analyze quality of the curriculum, standard and teaching level.

The joint analysis of formation of a large amount of competences demands use of the methods of multidimensional statistics with ambiguous subsequent interpretation. For reduction of this ambiguity, realization of feedback and for creation of a clear picture of result of work of higher education institution it is offered to use the specialist graduate’s model in the field of education. Existence of such model which is some combination of levels of competences will allow carrying the graduate to a certain type of the expert and by that to realize a feedback mechanism.

BACKGROUND

The model of the expert is a description of to what has to and the expert for what performance of functions he is trained can be suitable and what qualities possesses. Models allow to distinguish one expert from another, and also levels (qualities) of training of specialists of the same type. The model acts as a backbone factor for selection of the content of education and forms of its realization in educational process.

The problem of modeling of professional activity in connection with development of the content of training was considered by a number of authors (Tatur, 2004).

The analysis of the maintenance of the competences formulated by the Federal State Educational Standard of Higher education (The Common Cultural Competences (CCC), All-professional (OPC), in the field of pedagogical activity (personal computer), in the field of the cultural and educational activity (CEA)), allowed to distribute them on four essential blocks, agrees (Shadrikov, 2010):

**B1**: Analytical and conceptual thinking.
**B2**: Social communicativeness.
**B3**: Self-improvement.
**B4**: Professionalism.

Distribution of competences on the blocks stated above is presented in Table 1. We will note that in the considered splitting the same competence can enter at the same time some blocks.