The Development of Diagnostic Assessment Tools of Professional Competences’ Formation Level of Higher Educational Institutions’ Students

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Abstract: In the article is presented an experience of creating the bank of examinational and educational tasks, which promotes the assessment of professional competences’ formation level of higher educational institutions’ students. The diagnostic assessment tools of the competences are based on competence clusters, which are defined as world-view, regulatory and instrumental; their characteristic, ways and forms of assessment and levels of difficulty are given.

Key words: Pool of test and educational tasks · Basic educational program · Competence-based model of graduating student · Cluster

INTRODUCTION

The competence-building approach becomes one of important conceptual provisions of the education concept update in the 21st century. The transition to competence-oriented educational standards, application of such approach by higher educational institutions adds to expelling traditional cognitive orientations of education, leads to new vision of the subject matter of education, its methods and technology [1].

The problem of taking into account the competences, which are required for successful professional activity, is studied at formation of educational programs by both Russian [2] and foreign [3-5] researchers.

Formation of professional competences of higher educational institutions students, which provide for their functional literacy, responsible selection of education paths and self-development in all types of life activity is actively discussed in the contemporary pedagogical literature (A.A. Verbitsky [6], I.A. Zimnyaya [7], B.K. Kolomiets, A.K. Markova, J. Raven, N.A. Selezevna, A.I. Subetto, N. Khomsky, A.V. Khutorskoy and others) and the necessity to move to the paradigm of assessment of achievements in education to the assessment of the extent of formation of professional competences draw the focus of our research to the elements of the education process goal-setting – the total of cultural and professional competences. Proceeding from the message that a formulated goal requires determination of criteria of its achievement, we will consider the basic requirements for the structure of the pool of assessment means in the modern assessment system and determine the basic, to our opinion, diagnostic tools of assessment of students and graduates' professional competences formation. Such diagnostics is one of the primary issues that developers of basic education programs for higher professional education face.

At the Sholokhov Moscow State University for the Humanities, the test operation of the technology of diagnosing the extent of formation of students' professional competences takes place. This test operation is provided using the assessment means developed by members of experimental groups.

The means of competences assessment comprise the base of the test and education tasks pool (TTEP) in each education profile, which is a part of the competence-based model of a graduating student (CBMGS).

According to the hypothesis of our research, the competence-based model of a graduate student is understood as the formalized goal of the basic education program (BEP) completion, which is a system of: 1) substantiated indexes (competences), by which we can estimate the extent of conformance of a graduate to the requirements, which the labor market, the settled social
At the development of assessment tools, it is necessary to take into account that every competence cluster must be associated with its own tasks and methodology. There are no universal assessment tools and methods.

For example, the world-view cluster competences are measured using five types of tasks, which are dedicated to reveal: the knowledge of facts; the knowledge of relations; the pragmatic usage and good command of methods. There are no universal assessment tools and methods.

The scientific context is the leading context for tasks evaluating world-view competences. Accordingly, the assessment tools are to be more like traditionally used knowledge assessment tools, as the cognitive element of activity prevails in this case. These are, for example: open questions, knowledge tests for the reproductive level of competency formation, qualimetric problems; case studies, which target practical application of knowledge, for the pragmatic level of competence formation; and essays for the creative level.

When determining the extent of formation of regulatory competences, it is necessary to evaluate: the knowledge of standards, which describe this particular professional activity, including the properties associated with universal human values; the ability to evaluate a situation or a deed from the perspective of social standards, to form and to reason one's own attitude; the ability to make a conclusion, take a decision, act in accordance with one's personally accepted standards.

Assessment of regulatory competences require application of: tools for assessment of the knowledge of a standard, tools for assessment of the ability to assess a situation from the perspective of a standard, the ability to suggest standards and rules for regulation of certain activities. It is also reasonable for assessment of regulatory competences to prepare tasks, which can assess the readiness of a graduate to act according to a standard, for example, tasks that assume taking a decision in a difficult ethical situation, which is then followed by expert or group assessment.

For analysis of instrumental competences, the ability to solve standard and off-standard problems of various difficulty is determined: a) tasks, which reveal the ability to act according to a sample as the performer; b) tasks, which reveal the ability to organize unassistedly one's work according to the set goal; c) tasks, which reveal the ability to identify a problem unassistedly, select the path and overcome it; d) tasks, which reveal the skill of unassisted goal-setting.
Table 1: Tools of the instrumental cluster competences assessment

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<tr>
<th>Difficulty</th>
<th>Task type</th>
<th>Task form</th>
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<tbody>
<tr>
<td>Basic</td>
<td>Tasks, which reveal the ability to act according to a sample as the performer (certainty of conditions, certainty of results)</td>
<td>Simulation exercises</td>
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<tr>
<td>Advanced</td>
<td>Tasks, which reveal the ability to organize unassistedly one's work according to the set goal (uncertainty of conditions, certainty of results)</td>
<td>Case study, problem structure formation, development of recommendations, modeling, analytical report, essay, forecasting, modeling, Synectics, brainstorming.</td>
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<td></td>
<td>Tasks, which reveal the ability to identify a problem unassistedly, select the path and overcome it (certainty of conditions, uncertainty of results)</td>
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<tr>
<td>High</td>
<td>Tasks, which reveal the skill of unassisted goal-setting (uncertainty of conditions and results)</td>
<td>Project, practice, business game, quasi-professional creative task.</td>
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</table>

The context of professional activity is the most important context for the formation of the instrumental competences assessment tasks pool. Accordingly, test and exercise tasks must model the full solution of this task or solution of some aspects of it within a case study. Simulation tasks, reproduction of problem solution algorithms, cases analysis, business and role-playing games, project tasks, practical solution of problems, etc. will be efficient at that.

The content of an educational or test task is formed based on respective professional problem.

The form, in which the extent of a student's competence formation is evaluated, directly depends on the cluster, to which the measured competence belongs. If the task is used for assessment of the extent of several competencies, which belong to different clusters, the adequate form of the task is to be determined by the members of the experimental group by selecting it from tasks of respective clusters.

Along with that, as the competence develops, the tools of competence assessment also change from the simpler to more difficult and comprehensive ones. Each cluster is associated with its own levels of tasks' difficulty. For example:

The educational activity of academic type plays the main role in formation of world-view cluster competences, particularly at initial stages. Therefore, the assessment tools also derive from classical knowledge-based forms in this case. As competences develop, the assessment tools shift to the area of quasi-professional activity.

The regulatory cluster competences are a certain intermediate stage between the world-view cluster and the instrumental cluster. On the one hand, considerable part of these competences is determined by the knowledge of respective regulatory framework and ethical standards. On the other hand, values and legal regulations decline in importance if a professional does not use them as the guidance in his activity. This pointed-out ambiguity also takes place at selection of competence formation assessment tools.

The instrumental cluster competences are more congruent with the context of professional activity, than competences, which belong to other clusters. The context of sciences is represented indirectly in them, through particular professional qualities. Therefore, the assessment tools in this case are also oriented mostly to the quasi-professional activity and the educational and professional activity, rather than to the educational activity of academic type. Thus, tasks in this case are as close to the problems of professional activity as possible by both their content and their form. At ranking tasks by their difficulty, it is reasonable to consider the certainty or uncertainty of conditions, in which the task solution takes place and the expected result.

It is obvious that the pool of test and learning tasks needs to be annually updated, replenished with tasks that reflect the newly appearing requirements of the labor market and corrections made in the course of the education process. TTEP is replenished upon the results of researches carried out by both members of experimental groups and teachers who accomplish educational and research tasks on development of modules.

REFERENCES


