

Model of Effectiveness Indicators for the Applied Bachelor Programs in Education

Olga G. Smolyaninova

Institute of Education, Psychology and Sociology
Siberian Federal University
Krasnoyarsk, Russia
smololga@mail.ru

Vladimir V. Ovchinnikov

Siberian Federal University
Krasnoyarsk, Russia

Anna F. Luzakova

Krasnoyarsk Pedagogical College #1
Krasnoyarsk, Russia

Abstract— The need to implement the Applied Bachelor degree is caused by the fact that professional activity in many areas today require a sound theoretical basis as well as the technical skills. Innovative for higher educational institutions Applied Bachelor programs do not have clear effectiveness indicators, means to collect data and the indices for presenting the objective picture necessary for the employers and university administration. In our work we analyze the social and economic approach toward quality of education and their interrelation with a system of effectiveness indicators. We also study the correlation between the educational results and the educational standards.

Keywords-Applied degree, effectiveness indicator, competency approach

I. INTRODUCTION

The goal of the new all-Russia experiment which is scheduled for 2009-2014 is coordinating the professional training of highly qualified specialists with the modern requirements of the labor market. This experiment involves implementing Applied Bachelor's degree in Russian professional higher and secondary educational institutions. Unlike the traditional Bachelor programs the Applied degree is designed for "training highly qualified professionals for solving target problems".

Innovative for higher educational institutions Applied Bachelor programs do not have clear effectiveness indicators, means to collect data and the indices for presenting the objective picture necessary for the employers and university administration. This work is devoted to the described above problems. The need to implement the Applied Bachelor degree is caused by the fact that professional activity in many areas today require not only the technical skills but a sound theoretical basis. The process of professional training in secondary professional educational institutions became more complicated and more close to the university level. Realization of this project involves cooperation of the secondary and higher professional institutions in the form of a consortium or other forms of network interaction. The article presents our research work in the area of effectiveness indicators for Applied Bachelor degree.

This work was carried out with the support from Krasnoyarsk Regional Scientific Fund (Project KF-192) and the Ministry of Education of the Krasnoyarsk Region

II. THE ANALYSIS OF THE RUSSIAN MODELS OF EFFECTIVENESS INDICATORS OF APPLIED BACHELOR PROGRAMS

In our work we study the approaches to the effectiveness indicators of Applied Bachelor program in Russia. In Russia this type of assessment is applied to the special areas of the university activity and to some educational programs (in our case this is the Applied Bachelor program). In this context efficiency indicators show whether these programs correspond to the Federal State Educational Standards of higher professional education. Taking into consideration that Applied Bachelor degree appeared in Russia a year ago we failed to find significant materials devoted to working out and practical application of the quality indices at this level of higher education, but the existing effectiveness indicators of higher education can be applied to Applied Bachelor programs with on condition that certain corrections are introduced. Thus, we consider it necessary to exclude from the collected quantitative indicators those referring to the students' participating in the research work.

Within the Applied Bachelor program the *competencies* as the results of the educational process should be assessed; as well as *the educational process* as the process of mastering professional modules (PM) by the students. We also include in the area of the investigation the *interdisciplinary courses* (IDC) providing mastering the competencies within practical students' work; and conditions of and requirements to organizing the educational process.

Practical experience of Russian educational institutions include use of different indices and indicators for assessing competencies and efficiency. E.g. every professional module contains defined competences which are the result of mastering a module, every competency consists of the constituent parts and the indicators showing the students' level of mastering the competency. Table 1 describes the examples of the effectiveness indicators of mastering the Applied Bachelor program by the future elementary school teachers (the experimental program is offered at the Institute of Education,

Psychology and Sociology of the Siberian Federal University and is the result of the cooperation with the M. Gorky's Krasnoyarsk Pedagogical College #1):

TABLE I. INDICATORS OF MASTERING THE KEY PROFESSIONAL COMPETENCIES BY THE FUTURE ELEMENTARY SCHOOL TEACHERS

Organizing activity	Professional Competencies		
	Knowledge	Skills	Experience
Organizing professional activity; structuring of the types, means and methods of rational activity and the principles of organizing it	Developing, realizing and adaptation of the professional projects; using stochastic, statistic and other methods of investigation	Organizing part or all the activities; working out models; carrying out experiments and complex research works	
Indices: Names the structure of professional activity; names and characterizes the types, means and methods of rational activity	Indices: Takes part in working out the projects; takes part in their realization; applies measuring skills in practical work; skillfully uses methods of investigation	Indices: Works out projects; organizes and carries out research work; selects the necessary methods of research; realizes and introduces corrections in the technological processes	

Different universities develop their own *criteria and effectiveness indicators of educational programs*.

V.N. Gurov and N.A. Chikaldina [1] consider developing competency models important and underline the following factors:

- 1) Competency model should reflect a model of behavior, i.e. the task should be clearly separated from the required results.
- 2) The mentioned above behavioral characteristics should be visible, otherwise they have little practical value in assessment centers.
- 3) The language used should reflect the organizational culture.

St.-Petersburg branch of the State University – Higher School of Economy the procedures of assessing the quality of teaching are provided by the statistic, sociological (questionnaires filled in by the students, employers, teachers and administrators, interviewing teachers and students) and pedagogical methods (studying students' written works and projects, pedagogical documents, et al.).

While working out a complex of assessment tools within implementing Federal State Educational Standards of the third generation E.N. Kovtun [2] points out that a university should realize the following two important factors:

- 1) Assessment tools supporting realization of every educational program should be developed for *controlling the quality of the competency to be formed*.

- 2) The assessment tools as *indivisible part of educational technologies* (innovative in the first place) should become an effective assessment means and (mostly) *education*.

There is a close connection of the two sides of the educational process: educational technologies (ways and means of working out the competencies) and the methods of assessing the level of the formed competency (corresponding assessment means).

The assessment means should logically supplement the methods of teaching, allowing the student clearly define his achievements and weak points and introduce corrections in his work; for teachers assessing the student is the means to help him and advise what changes should be introduced.

The analysis and totaling the opinions of the researchers show that professional training of future specialists is many-faceted and includes adopting fundamental knowledge, formation the ability to use this knowledge in practical work and developing personal characteristics. The authors of this paper also support the opinion that professional training involves many components.

III. THE AUTHENTIC MODEL OF APPLIED BACHELOR PROGRAM EFFECTIVENESS ASSESSMENT AT THE SIBERIAN FEDERAL UNIVERSITY

We consider assessing how effectively the students master professional program is most important, this is done by means of assessing the level of general cultural and professional competencies [3]. Describing clear procedures and assessment methods for evaluating the level of competencies is the target area of investigation for the developers of the Applied Bachelor degree programs. For working out the effectiveness indicators the social and economic aspects of "quality" become of prior importance.

Within this social and economic understanding of quality of education the following approaches may be distinguished [4]:

- 1) Value-scale approach for assessing the quality of education as the sum total of many characteristics (the quality of the subject of the educational services – the student; and the quality of the object offering educational services – the educational institution);
- 2) Technological approach implies that the quality of education is the sum total of the six subsystems: quality of the educational process, quality of the pedagogical staff, quality of the scientific and methodological support, quality of administrative support, quality of the quality assurance system, and quality of marketing;
- 3) Person-centered approach regards education not as the process of transmitting knowledge, skills and abilities but as the process of personal development.

While considering the category "quality" it is appropriate to correlate it with the term "effectiveness". *Effectiveness reflects the level of achieving the goal by means of certain inputs*. That is why we may say that effectiveness is

quality plus expenses. *We consider the following definition of effectiveness appropriate: minimum resources for a certain level of quality and quantity of services.*

We think that social and economic approach toward quality of education allows developing a system of effectiveness indicators for Applied Bachelor degree programs reflecting the correlation between the achieved level of educational results and the educational standard, social and personal requirements and the requirements stated by the customer (the state, society, employer, student and his parents). This system consists of the three components: values, technologies and personality.

IV. CONCLUSIONS

Unlike many other authors we differentiate the terms “indices” and “indicators”. We do not treat them as synonyms. Under indicators we understand qualitative characteristics of the subject under assessment. We define criteria as characteristics corresponding to indicators and eligible for assessing. And, finally, we understand indices as a system of measures, a range of measured characteristics, levels for indicators, which allow us to make indirect judgments about qualitative characteristics – indicators of effectiveness.

The structure of effectiveness indicators of the educational program is regarded by the authors as the hierarchical sum total of the interrelations and correlations between the following elements: qualitative effectiveness characteristics – object of the assessment and the indicators – in the interrelation with the quantitative characteristics of effectiveness: criteria – indices – assessment procedures. Quantitative characteristics allow judging on the levels of achieving qualitative characteristics in the process of realizing educational programs including fundamental, basic and

advanced training. Apart from that we take into consideration the processes providing professional training of the Bachelor program student – conditions, resources and contexts of realizing the educational program. Within the undertaken research we defined the following basic lines of the educational environment for the Applied Bachelor degree: production and technical training as basic training; scientific, research and projecting training; types of activities for career development. Bachelor program students may choose between the two of them: scientific, research and projecting training; and the types of activities for professional and career development. This requires a multi-level system of qualifications.

ACKNOWLEDGMENT

We would like to thank the Krasnoyarsk Regional Scientific Fund for methodological and organizational assistance in this experimental research.

REFERENCES

- [1] V.N. Gurov, “Constructing educational environment in the context of module-competency technology”, *Innovazii v obrazovzнии*, №5, 2011.
- [2] E.N. Kovtun, “Method of projecting and using means of assessment within implementing at the university the educational programs of the new generation”, N.E.Bauman’s Moscow State Technical University, 2009.
- [3] O.G. Smolyaninova, “Competency approach in pedagogical education in the context of using multimedia”, monograph, Krasnoyarsk State University, Krasnoyarsk, 170 pp., 2006.
- [4] L.V. Shkerina, “Updating the quality assurance system of training future teacher at a pedagogical university”, monograph, Krasnoyarsk, RIO GOU VPO V.P. Astafyev’s Teacher training University, 274 pp., 2005.