

# Improving the Quality of Professional Educational Programs of College Education against Modern Social and Labor Relations

Pavel Borisovich Avdeev<sup>1</sup>, Dulma Cirendashievna Dugarova<sup>2</sup> and Svetlana Efimvona Starostina<sup>3\*</sup>

<sup>1</sup>Mining Faculty, Transbaikal State University, Chita, Russia

<sup>2</sup>Institute for Education Development Management, Transbaikal State University, Chita, Russia

<sup>3</sup>Rector's office, Transbaikal State University, Chita, Russia; [sestarost@mail.ru](mailto:sestarost@mail.ru)

## Abstract

While analyzing the trends towards integration of the world of labor and education, development of professional standards that determine new social and labor relations, this article deals with challenges of creating an educational program design and quality system implementation. Three groups of education quality parameters have been identified, such as quality of conditions, i.e. quality of education goal achievement potential, quality of the very process of forming professionalism of a trainee, and professional education outcome quality. The education outcome quality is ensured by the formation of professionalisms of trainees against the coherence and consistency of certain training goals and correct choice of ways to achieve such goals. Educational program design and implementation under such circumstances differs from the conventional design approach to the professional educational program. The integration of the world of labor and education in the process of students' training at a college implies incorporation of such types of activity that are envisaged by the functional chart of the professional standard into the educational programs. The functional chart of a type of professional activity of a professional-to-be standardizes managerial actions regarding common labor functions in accordance with qualification levels for the education program design. The educational program design and implementation quality control system means continuous efforts aiming at improving the structure and content of college-level educational programs, while it is a process, an act of choice, and choice outcome, as well as command-oriented information about improving college-level educational program quality. This research concentrates on determining key parameters and quality criteria for educational program design and implementation.

**Keywords:** College-Level Educational Program, Educational Program Quality, Integration of the World of Education and Labor, Managerial Decisions

## 1. Introduction

Our national colleges and universities have switched to the FSES of college education, and they now consider the educational program to be a complex, multifunctional and multipurpose product, which combines qualities of the social, teaching and economic product, and marketing and managerial decisions. A college-level educational program is the key instrument for providing educational services, implementing the integration of the world of education and labor, and it reflects concentrated expectations of the society, labor market

and the government in terms of education outcomes in a competent-based format.

Training of future professionals for the innovative national economy has determined a controversy of the necessity to design and implement Basic Professional Educational Programs (BPEP) in college, which are a complex and explicated social norm of the institutional college level, and insufficient educational process management efficiency, using conventional management techniques of cognitive activity of trainees against the new social and labor relations; therefore, BPEP design and implementation quality improvement implies studying a

\*Author for correspondence

heuristic potential of managerial decisions to arrange for BPEP design and implementation as targeted processing of information into command-oriented information about college education process management.

Study of best practices<sup>1-3</sup> of educational program quality assurance proves it to be a complicated and multi-aspect challenge of the modern education. Primarily, this is due to the fact that the very concept of 'education quality' gets a new meaning. It is not interpreted just as a 'measure of usefulness', but also as a form of educational process arrangement, which allows for implementing a number of educational programs at colleges as a system that assures compliance with the requirements of all concerned parties (students, their parents, college employees, employers, and the government)<sup>4</sup>. While analyzing trends towards the development of ideas and practice of college education quality assurance, one can distinguish between three groups of education quality parameters, such as quality of conditions, i.e. quality of education goal achievement potential, quality of the very process of forming professionalism of a trainee, and professional education outcome quality<sup>5</sup>. The application of professional standards implies raising the educational program quality against the integration of the world of labor and education, where each educational program must correspond to the public demands and lead to employment of graduates. The education outcome quality is assured by forming the professionalism of trainees against the correct choice of goal achievement ways, coherence and consistency of the goals established. Educational program design and implementation under such circumstances differs from the conventional design approach to subject-based educational programs.

Experts of the Coordinating council of basic colleges of the ERO and BPEP structure and contents developers carried out a public and academic expertise of college BPEPs in 2010-2012<sup>6</sup>. According to this expertise, insufficient flexibility is the main flaw of the national college education system, which expresses itself by lack of correspondence to the current changes in the economy. There is not any labor needs prognosis available. Most educational programs do not give the whole picture of competency-based orientation of such programs. There is not any required flexibility of teachers and trainees, there are not any explicit educational program quality assessment criteria, and non-correspondence of most current educational standards with the requirements of employers is clearly observed.

The findings and conclusions of this public and academic expertise became the basis for developing a module-structured BPEP design and implementation quality control, based on the integration of the world of education and labor against the new social and labor relations.

Cooperation of the government, businesses and educational institutions in forming standards, improving educational program contents, combined participation in education quality expertise, advanced training program development for the personnel of the educational institution are obviously of high priority for integrating the world of education and labor. Employers should participate in monitoring determination of professional labor needs of the economy, which will allow for more competent and systemic formation of the government order for college training. Participation of employers directly in determining the contents of educational programs should also be welcomed<sup>7</sup>.

2016-2020 Federal target education development program<sup>8</sup> defines measures to manage the content-related component of college education with view to the integration of the world of education and labor among key directions in achieving the strategic goal and ensuring education quality:

- Developing a quality assessment system for the college education by supporting an independent accreditation and educational program quality assessment, including involvement of the society and professional associations.
- Ensuring implementation for all consolidated specialty groups (majors) of professional and public accreditation mechanisms for the educational programs.
- Creating and maintaining effective activity of governmental and public administration at all professional educational institutions with the participation of employers.
- Determining mechanisms for cooperation of college-level educational institutions and labor market representatives that ensure attraction of extra material, intellectual and other resources to the education.

Analysis of research literature<sup>9-12</sup>, program documents of the Government of the Russian Federation regarding education modernization<sup>8,13,14</sup> determine the problem of the research: improving the quality of professional educational programs of college education against modern social and labor relations.

Approaches to forming a professional educational program quality control system were discussed during

the analysis of the problem, with successive solutions for the following tasks required to determine such approaches: determining and conceptualizing education quality objectives; learning needs of the labor market and potential employers; establishing a basic process complex as an open model; developing and adapting process control techniques to ensure university functionality and development; providing paperwork for the quality management system; monitoring the processes by means of an internal audit.

## 2. Approach

Solving the target research tasks allowed for determining conceptual and theoretical grounds for college education quality assurance in Russia, which consist of scientific and methodological grounds for quality assurance and legal grounds for harmonization of the world of labor and education.

Scientific and methodological grounds include analysis of a modern education modernization phenomenon and incorporation of the TQM (Total Quality Management) principles into the education management system<sup>15-17</sup>. Development of TQM-based education quality assurance mechanisms is subdivided into problems, such as: creating an educational program quality control system; determining the contents and order of actions that ensure quality of educational services that are provided by a college or university; education quality control; designing an ongoing education quality improvement system of an educational institution.

The following educational program design quality mechanisms are used as legal grounds for the harmonization of the world of labor and education:

- implementing a college education quality assessment mechanism, based on the information openness of educational institutions and permanent public monitoring system (involving representatives of employers and public associations), creating regional integrated qualification certification centers;

- broad systemic spread of module-structured professional training programs, providing an opportunity for students to build their own educational trajectories;

- providing for involvement of the public and business institutions in educational institution management and education quality control;

- involving employer associations in developing professional education laws and other regulations, and compiling training lists<sup>18,19</sup>.

The educational program design and implementation quality control system is a complex and target-oriented system that accumulates prospective ways for developing the education system, based on understanding the quality to be a universal meta-factor that allows for integrating paradigm and individual subject-structured knowledge into the organic whole, based on the process-oriented approach (process-oriented model) and includes three sub-systems, such as:

- a sub-system of managerial approaches that are used to solve certain problems, oriented towards a qualitative change of a certain educational factor;

- a sub-system of theoretical and methodological grounds that are presented at the general scientific, strategic, practice-oriented and factorial levels; and

- a sub-system of value components and factors of various nature (motivation, competency etc.).

The process-oriented quality model is actualized by the standards and GOSTs,<sup>20,21</sup> and guides a college or university towards satisfying the needs of consumers and the labor markets with the help of process management. The following groups of processes have been distinguished: basic, quality management processes, and processes that ensure overall education quality. Trained specialists graduating are the outcome of the basic processes. Improved efficiency of the basic and auxiliary processes is an outcome of the quality management processes. Creation of the necessary conditions for running the basic processes is an outcome of the auxiliary processes. Determination of the structure and de-composition of the distinguished process groups allows for building a power and liability distribution matrix, determining the owners, managers and parties to the processes that ensure functionality and development of the college or university.

The uprise of the challenge of actual integration of the world of education and labor in the process of student training implies understanding and review of conclusions on the necessity of preparation, adoption and implementation of the managerial decisions that are connected directly or indirectly to goal achievement of the college or university at large and parties to the educational process. Such new interpretation is also proved, for example, by the subject matter of the report

of the Ministry of Education and Science of the Russian Federation About high-priority course of development of the Russian educational system until 2020<sup>14</sup>. This report associates quality improvement tasks of college-level educational institutions with the necessity of transition from the educational institution management to the basic educational program management. Moreover, the BPEP management must be based on expertise of the BPEP.

### 3. Results and Discussion

Study of BPEP design and implementation quality improvement challenges against the integration of the world of labor and education implies incorporation of the following key indexes:

- Presenting management in terms of a systemic approach. This is due to the fact that managerial decisions that are made in one areas impact decisions in other areas.
  - Designing and implementing BPEP at a college or university, using the basic principles, such as: framework documents (professional and educational standards, national qualification framework) serve as instruments for integrating the world of education and labor; determining training outcomes that correspond to the program profile in terms of competencies; providing resources (academic and administrative personnel, instructors and tutors, material resources, social and cultural infrastructure); selecting training and assessment techniques.
  - Knowledge of managerial decisions. There are many definitions of the 'managerial decision' available in special literature. A decision means a process, and also an act of choice, and command-oriented information. A decision as an outcome of choice is a guideline<sup>22</sup>. N. I. Zaichkin<sup>23</sup> considers a decision to be command-oriented information that has been obtained in the process of management as a constant transformation about the state of the object. A managerial decision shall mean, for the purpose of our research a process of compiling, adopting and implementing inter-connected BPEP design and implementation documents.
  - Integrating the world of education and labor for designing and implementing the BPEP of a college or university, based on various documents that have been compiled according to the competency-based approach (professional education FSES, Professional standards according to training profiles, National qualification framework).
  - The following are BPEP design and implementation criteria: ensuring correspondence of targets and expectations of students, teachers, employers and the public; ensuring correspondence of the resources (scientific and academic, material and social and cultural resources); college or university BPEP relevance.
  - Students, potential employers, the government, society and internal consumers are quality parameters according to consumer groups of educational services. While clarifying the requirements of various consumer groups, one will be able to establish the overall normative goal, determine key development priorities of the educational institution, an algorithm of expanding the requirements of the professional standards into a hierarchic structure, based on the use of a cause-and-effect diagram and TQM tool, which allows for determining the correlation between the education quality parameters and labor factors that affect such quality parameters.
- Moreover, the increased role of labor market representatives in professional training may not be limited to a conventional task of attracting extra resources to the education. Labor market representatives should be involved in educational program expertise, public and professional associations for developing new-age educational standards and module-structured BPEP, based on such standard.
- On the other hand, for the purpose of creating a demand for research and development product in the college education sector, measures to ensure effective cooperation with colleges and universities within module-structured educational programs must be envisaged within innovative corporate development programs covering the following aspects:
- determining subject-based (educational, scientific technical) lines of joint research;
  - developing, together with colleges and universities, educational and research programs, which envisage mechanisms for sharing educational, scientific and technical information, performing joint tasks for estimating new lines of training, scientific and technical research, creating a module-structured BPEP quality control system, and estimating scientific and technical development; and
  - implementing programs that have been approved by the colleges or universities for improving the quality of education and training personnel for high-tech industries, which imply participation of companies in improving educational programs, participation of company's employees in teaching, developing a sys-

tem of practical training and internships for students and post-graduates and academics at the companies, and developing continuous education.

The Transbaikal State University has been actively involved in accomplishing these tasks, while improving primarily engineer and teacher education in all aspects concerning learning, science and technology, including processes of teaching, consulting, researching, developing engineering and teaching solutions, establishing relations with the public, school, manufacturers, scientists and integrating into the international scientific and educational space.

The following are controlled elements of quality control and assessment: educational programs that are to be designed and implemented in accordance with college education FSES and labor market requirements, based on the Governmental and Private Partnership (GPP); competency-based model of a graduate, developed in accordance with the requirements of all parties involved; parties to the GPP; competency passport and establishment programs; educational process materials; professional competency of teachers, their activity to ensure the required education outcome quality; educational process arrangement quality; interactive labor market study and professional education contents updating; cooperation

with social partners; self-inspection of university's activity.

Educational program design and implementation quality control is done in two phases<sup>24</sup>.

- Early phase (collecting background data for program design, program quality planning).
- Main phase (designing the educational program, assessing educational program quality).

Let us illustrate BPEP design and implementation quality control, using engineering majors as an example. Criteria of the Association of Engineering Education in Russia (AEER) are criteria for assessing the quality of module-structured BPEP design and implementation. The use of global accreditation experience, involvement of employers and students in the expertise and implementation of other target technologies that differ from the national accreditation are the specifics of these criteria<sup>9</sup>. Tasks of the early educational program design phase have been presented in Table 1.

Thus, the early educational program design management phase ends with determining the program concept and collecting background data for determining educational program objectives and training outcomes. This phase is implemented jointly by all parties to the GPP. The requirements of the strategic partners take priority for BPEP designers.

**Table 1.** Early module-structured BPEP design phase

No	Phase tasks	Contents	Results
1	Determining the BPEP concept	The key program idea must be represented in the educational program concept, the necessity for creating such program must be justified and specifics of specialist training and their competency uniqueness must be reflected.	Program concept, including the mission, objectives and tasks of the BPEP.
2	Determining background data for the design	- global requirements to engineering and technology specialist competencies ( <i>FEANI, EMF</i> ); - requirements to graduate competencies according to the international standards ( <i>WA Graduate Attributes and Professional Competencies, EUR-ACE Framework Standards for Accreditation of Engineering Programs</i> ); - general requirements to specialist training for professional activity; - special requirements of strategic partners (parties to the GPP);- special competencies, associated with the uniqueness of tasks, objects and types of professional activity (scientific and research, production and technological, administrative and managerial, design activity etc.) at various companies; - requirements of the college education FSES	Compliance of the BPEP to the specified special requirements on the part of parties to the GPP and employers. Satisfaction by the parties to the GPP and employers of the requirements to the program in security for future investment in the program design, providing the required resources for the program and paying for the target specialist training.
3	Program quality planning	Balanced compliance of the educational program with the requests of the students, being its major consumers, and expectations of the interested parties, such as the government, potential employers, parties to the GPP and professional community, and interests of the college or university shall mean the educational program quality.	A list of competencies that are further differentiated to establish educational program objectives and training outcomes.

**Table 2.** Main module-structured BPEP design phase

No	AEER's criteria	Criterion description	Notes
1	<b>Program objectives.</b>	The BPEP objectives are consistent with the college or university mission and requests of potential program consumers. Training outcomes are established, based on the educational program objectives.	The following recommendations are a guide for establishing the BPEP objectives: each objective corresponds to one or more request of the consumers; an objective must be understood and shared by the group of consumers, if the objective must satisfy the interests of such consumers; an objective must be broader and deeper than the requirements to the training outcomes; at least one training outcome must correspond to each objective.
2	<b>Program contents.</b>	Intended training outcomes are achieved as a result of completion of program modules. A BPEP structure must be developed for modules and courses with their contents aiming at achieving certain training outcomes.	One should benefit from building a program module (course) and credit-based training outcome matching matrix, while developing the structure and contents of the BPEP. Along with determining the structure of each BPEP module (course), one must determine types of academic studies and distribute the time resource for conducting such studies.
3	<b>Students and educational process.</b>	Students must have a certain level of training. Training technologies to ensure achievement of the intended training outcomes in the most effective way must be envisaged for each module.	Individual and group research project should be preferred for academic programs, and practice-oriented techniques and project-arranged training technologies for applied programs. One should benefit from active training techniques.
4	<b>Academic staff.</b>	Academic staff must be represented by specialists in all fields of knowledge covered by the BPEP; academic staff must be adequately qualified.	Parties to the GPP that have work experience in a certain industry must be involved in implementing BPEP modules. Academic staff must work upon research products, participate in grant-obtaining and must be members of professional associations
5	<b>Preparation for professional activity.</b>	Preparation for engineering activity must go on during the whole training period. Design and engineering experience must be formed in the process of writing course papers and projects.	There must be a mechanism for assessing the overall training outcome and outcome of individual modules, and documents (assessment means fund, including indicators, criteria and assessment techniques) to confirm the achievement available for the program. An expertise of the assessment means fund as a tool for assessing competencies by the professional community (parties to the GPP) must be conducted.
6	<b>Materials.</b>	Materials must not be lower than the license indicators.	In order to fulfill the license indicators, parties to the GPP must be involved in implementing BPEP, conducting scientific research based on strategic partners, in particular by using jointly the equipment and innovative structure.
7	<b>Information support.</b>	Information support must be adequate to the program objectives (library specification, computer-assisted training process, Internet access).	Free access to information resources for students and teachers; ongoing updating, improvement and expansion of the information base are a vital factor.
8	<b>Finance and management.</b>	Financial support of the program must not be lower than the license indicators. College or university administration must be effective and provide for BPEP improvement.	Colleges and universities currently provide educational and scientific services under the following circumstances: switching from budgetary funding to governmental order principles; market demand for the BPEP and transiting from 'student-college' relations to 'consumer-provider' relations; establishing a complete innovative cycle at a college or university: science - production - market; establishing innovative infrastructure (business incubators, small enterprise, shared knowledge centers etc.); and diversifying college funding sources and building a system of active attraction of extra-budgetary funds (fundraising), and primarily parties to the GPP.

- 9 Graduates.** A career follow-up and continuous professional improvement system must be in place at a college or university for the graduates, and any data that are obtained using this system must be used for assessing goal achievement progress and further BPEP improvement.

Regular social studies must be conducted with study of employment of graduates, discovery of the graduate being satisfied with the education quality, employers, parties to the GPP in particular, being satisfied with the specialist training quality, and determination of interrelation of parties to the GPP as their goal. Correcting module-structured BPEPs, according to such social studies

Let us introduce the main module-structured and GPP-based educational program design management phase in accordance with the AEER's criteria (Table 2), which are an easy landmark for designing programs, using the competency-based approach.

A module-structured engineer training BPEP that implements the educational program objectives that have been coordinated with the requests of potential program consumers and provides for establishment of generalized types of professional activity; preparation for performing special labor functions in accordance with the needs of the parties to the GPP is an outcome of the second phase.

Types of GPP participation in the module-structured BPEP design and implementation management that have been presented in Tables 1 and 2 may be classified according to their involvement in the educational process or assessment of educational process outcomes. Such approach allows for distinguishing between two major professional education quality control directions without regard for education level<sup>25</sup>. The first direction is a joint activity, involving labor market representatives to include types of activity that are envisaged by the functional chart of the professional standard into professional educational programs, develop and improve educational programs, curriculum, and course programs. The second direction is a joint activity of college-level educational institutions, labor market representatives and employer associations in education management, and primarily in developing corresponding educational standards, based on the professional standard.

These two directions illustrate the ways for integrating the world of education and labor against the new social and labor relations, on the one hand, and expose basic risks of forms and mechanisms of the governmental and private partnership in the college-level education, on the other hand. According to the analysis of these directions, one can determine measures that stimulate GPP subjects to participate in the module-structured educational program design and implementation quality control.

## 4. Conclusions

Findings of the research within the *Module-structure professional educational program development management for leading industries of the Transbaikal region, based on the governmental and private partnership project* allow for stating the following:

- module-structured educational program design and implementation quality control must be provided against the governmental and private partnership in accordance with the international criteria and standards to satisfy the needs of parties to the educational process, such as trainees, their parents, future employers, and the public;
- there must be a certain potential available for module-structured professional educational program design and implementation quality control and such potential must include the status, objects and subjects and elements of control, and image of all subjects to the GPP that participate in implementing module-structured BPEPs, and not just the educational institution itself;
- the educational program design and implementation quality control system means continuous efforts aiming at improving the structure and content of college-level educational programs, while it is a process, an act of choice, and choice outcome, as well as command-oriented information about improving college-level educational program quality.

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