



New Trends and Issues Proceedings on Humanities and Social Sciences



Issue 11 (2016) 70-77

ISSN 2421-8030

www.prosoc.eu

Selected Paper of 5th World Conference on Educational Technology (WCET-2015), 15-17 October 2015, Nicosia, North Cyprus

Organizational, content, and technological updating of educational process in modern Russian higher schools in the conditions of science and education integration

Aydar M. Kalimullin^a *, Kazan (Volga Region) Federal University, Kremlyovskaya Street, 18, Kazan, 420008, Russia.

Suggested Citation:

Kalimullin, A., M. (2016). Organizational, content, and technological updating of educational process in modern Russian higher schools in the conditions of science and education integration. *New Trends and Issues Proceedings on Humanities and Social Sciences*. [Online]. 11, pp 70-77. Available from: www.prosoc.eu

Selection and peer review under responsibility of Huseyin Uzunboylu, Near East University, North Cyprus.

©2016 SciencePark Research, Organization & Counseling. All rights reserved.

Abstract

The research relevance of organizational, content and technological updating of educational process in modern Russian higher education institutions is substantiated by the increase of globalization processes in the conditions of which higher school is experiencing difficulties when it comes to the competition in the market of educational services. In this regard many higher schools are developing and realizing new trajectories of preservation and accumulation of their competitive advantages. This article is aimed to reveal regional experience of organizational, content and technological updating of educational process in Kazan Federal University as the strategic priority to enhance its competitiveness within the Program of competitiveness increase among leading world scientific and educational centers. The key idea of the research was the development of a project aimed to create a research laboratory in collaboration with the Russian Academy of Education at Kazan Federal University; the results of their joint activity are directed to the introduction of new mechanisms to update educational process in the conditions of science and education integration. The article covers the goals and issues of a higher school and research laboratory scientific interaction within the Program of competitiveness increase of higher education institutions; the results of joint development and implementation of educational process monitoring system in a higher education institution are presented; requirements to organizational, content, technological, and information-methodical support of educational process in a higher education institution are elaborated. The article provides a project on organizational, content, and technological updating of educational process in modern Russian higher schools in the conditions of science and education integration that is of practical value for the constructive extrapolation of the presented experience in other higher education institutions; the results obtained in the course of joint activity can be used as a guideline for further organizational and pedagogical development aimed to increase the competitiveness of higher education institutions.

Keywords: competitiveness of higher education institutions; educational process; integration of science and education; organizational, content, and technological updating.

* ADDRESS FOR CORRESPONDENCE: **Aydar M. Kalimullin**, Kazan (Volga Region) Federal University, Kremlyovskaya Street, 18, Kazan, 420008, Russia.

E-mail address: kalimullin@yandex.ru / Tel.: +79196826550

1. Introduction

1.1. Relevance of the issue

The accession of Russia to the Bologna Convention caused the necessity to update the training process in modern higher schools. Innovative changes have affected organizational, content, and technological aspects of educational process connected with transformation of goals and values in higher education institutions due to their movement to the status of scientific-research ones in the conditions of globalization and internationalization of higher education. This direction requires a detailed examination of educational process arrangement at a higher education institution; development and approbation of variable models of bachelors' training (Kalimullin, 2014; Gabdulchakov, 2014; Safiullin et al., 2014); introduction of innovative variable and flexible master's programs, strengthening of a research component in their training, formation of their cross-cultural competence; developments of students and teachers' academic mobility; ensuring continuity of scientific schools at a higher education institution; development of new approaches to education standardization focused on competitive participation of higher education institutions in the international market of education services.

1.2. Tendencies in organizational-content updating of educational process

The process of higher school training intensification is characterized by a number of tendencies. There are the following among them: integration of vocational and common cultural training of specialists along with their personal qualities development, aspiration to self-realization, creative self-expression; move to creation of curricula in a block-based way with a wide choice of elective courses, rating system of knowledge evaluation, a wide range of opportunities for independent deepening of specialization; introduction of open systems of intensive training in educational process, etc. (Valeeva&Karimova, 2013; Parfilova& Karimova, 2015; Sakhieva et al., 2015).

1.3. Relevance of educational process technological updating

Modern educational technologies serve as a tool of practical implementation of new training systems that have higher pedagogical characteristics in comparison with traditional educational systems. These technologies guide educational process on the achievement of a necessary level of training efficiency and quality, and provide each student with the possibility to choose their individual educational trajectory that considers their cognitive abilities, motives, inclinations, and other personal qualities to a full degree (Zakirova&Koletvinova, 2014).

The updating of modern higher education content is accompanied with the development of effective training technologies. Many higher education institutions give preference to traditional training technologies; they disregard humanistic relations, personal communication, and interaction of participants of an integrated pedagogical process (Kalimullin, 2014b; Vlasova, Kirilova&Sapirova, 2015). In this regard, the problem of educational process technological updating in a higher education institution is urgent in pedagogical science and practice at higher education institutions.

2. Methodological Framework

The research laboratory of the Russian Academy of Education (RAE) and Kazan Federal University was created in April, 2014 under the leadership of the head of the university I.R Gafurov; its aim is organizational, content and technological updating of educational process (Gafurov, Platonova& Pratchenko, 2014). The laboratory allowed the university to receive highly skilled and specialized consulting services of RAE scientific divisions. In its turn, Kazan Federal University – as one of the largest higher education institutions of the Russian Federation (more than 47 thousand students, 180 curricula for a bachelor's degree, 120 curricula for a master's degree) and a participant of the Program of competitiveness increase among leading world scientific and educational centers – represents a strong experimental base for approbation and introduction of new ideas developed by RAE scientists.

2.1 The goal of Kazan Federal University and the Russian Academy of Education collaboration

The creation of a research laboratory in cooperation with the Russian Academy of Education on the basis of the University was aimed at providing a qualitatively new level of competitive graduates' training and formation of an integrated position in educational process: "student - the subject of education: individual - personality - human" due to educational process intensification by means of technological updating of person's open, flexible, and individualized lifelong education.

2.2 Collaboration goals of RAE and University research laboratory:

- Development and introduction of an educational process monitoring system in a higher education institution;
- Ensuring organizational and content updating of educational process in a higher education institution;
- Implementation of effective educational technologies complex introduction;
- Information and methodical support of educational process in a higher education institution.

3. Results and Discussions

3.1 Development and introduction of an educational process monitoring system at a higher education institution

The necessity to set this task is substantiated by the fact that its solution allows the tracing of the dynamics of students' educational motivation levels formation, their professional competences, personal growth, and to implement the appropriate correction at organizational and administrative (development and introduction of a set of fundamental documents about the quality system according to the international ISO 9001:2011 standard; designing of lifelong learning in accordance with the variability of higher education curricula and individual educational trajectories); social and pedagogical (extension the practice of international educational programs development, including franchising and programs of double higher school diplomas; interaction with employers during the whole training period; creation of the institution of consultants dealing with academic matters (tutors) and helping students to solve problems arising in the process of training); information and technological (improvement of e-University educational network platforms that represent a complex of software to arrange distance learning, consultation and knowledge testing in the network mode; introduction of training technologies that assume organization of students' independent work and wide use of: information technologies, technologies of distance and project learning, reflexive techs in combination with technologies aimed at the development of critical thinking, research technologies, etc.;

introduction of Big Data technology to form a common database of applicants and students' educational achievements, to create a bank of educational technologies and the register of teachers' technological potential, to study indices of social sphere, etc.) ; educational and methodical levels (application of modular curricula providing students with the possibility to choose their individual educational trajectory, development of an individual educational route; development of modular educational programs of applied Baccalaureate; development of hand-out materials for foreign students experiencing difficulties in language communication). 4.300 applicants were questioned at the first stage of the research.

3.1.1 Solution of the given task

In the course of solving this task, the analysis of motivational structure change dynamics of higher school students studying various courses was conducted; assessment procedures of students' vocational competences formed at studying different disciplines in different years of study were approved; accessibility to obtained results of students' educational achievements assessment was provided; key indicators of students' personal growth were defined.

3.1.2 Reserves and recommendations

The results of the conducted research determine the following actions: creation of a database of higher school students' motivation factors, their educational achievements, digital portfolio of students' achievements; identification of barriers and resources that hinder/promote successful educational policy development; evaluation of the reality of achieved educational results by means of available resources within the allowed time, and in case of need entering of amendments into the educational policy of a higher education institution; development of individual educational trajectories with students' personal growth monitoring in view.

3.2 Ensuring organizational-content updating of educational process at a higher education institution

The necessity to provide organizational and content updating of educational process is connected with goals and values transformation at higher education institutions due to their move to the status of scientific-research ones in the conditions of globalization and internationalization of higher education. This direction requires a detailed examination of educational process arrangement at a higher education institution; development and approbation of variable models of bachelors' training; introduction of innovative variable and flexible master's programs, strengthening of a research component in their training, formation of their cross-cultural competence; development of students and teachers' academic mobility; ensuring scientific schools' continuity at a higher education institution; development of new approaches to education standardization focused on the competitive participation of higher education institutions in the international market of educational services.

3.2.1 Solution of the given task

The solution of this task resulted in the development of an estimation procedure of organizational and methodical indices of conducted classes; classes conducted by teachers were subjected to examination in some KFU institutes; information on implemented training technologies has been collected; presentations of teachers' professional activity results, pedagogical innovations databank, an exhibition of methodical and creative works have taken place; variable training models of bachelors in the direction of "Pedagogical education" have been singled out at KFU: traditional (Elabuga Institute), distributed (institutes and faculties of KFU), integrative (IPO – at the stage of introduction); the standard of higher pedagogical education at KFU has been developed and submitted for discussion

at the Coordination council; modular curricula and educational programs of bachelors' training according to profiles have been worked out; a linear trajectory of training has been given up and conditions for free "entrance" to programs of vocational training have been created; contracts with educational institutions and SC for the implementation of various forms of on-the-job training and network interaction have been signed; analysis of master's programs in the field of professional pedagogical education among students of non-pedagogical specialties has been carried out (for bachelor's degree graduates on pedagogical specialties); innovative GEP of applied magistracy in "Management in Education" and "Pedagogue in the System of Secondary Education" have been developed, approved and realized (for bachelor's degree graduates that have non-pedagogical specialties); the modular program "Professional and Pedagogical Day" with partner schools' assistance (lyceum named after Lobachevsky, IT lyceum) is being implemented, it allows to provide: the use of junior and senior students' joint activity resources (strengthening of a practical component, use of "internal" reserves for the formation of vocational competences, creation of organizational conditions for professionally oriented upbringing activity); classes and practices conducted on the basis of partner schools (inclusion in a real educational process); the pilot project of an additional educational program "Pedagogical education" has been elaborated for third-year and fourth-year students of non-pedagogical profile motivated for a pedagogical profession; continuous monitoring of KFU graduates' employment is conducted with RT employment services. The grant of the Ministry of Education and Science of the Russian Federation for the sum of 13.8 million rubles was won as a result of the research.

3.2.2 Reserves and recommendations

The results of the conducted research determine the following actions: creation of an individual methodical trajectory of higher school teachers' development; creation of conditions for personal, methodical, and professional growth of teachers working at KFU, successful adaptation of young specialists to teaching activity in a higher education institution; creation of methodical resources information bank; elaboration of mechanisms aimed at stimulation of methodological, critical, creative thinking, and professional competence of the teaching staff.

3.1. Implementation of effective educational technologies complex introduction

Complex introduction of effective educational technologies is connected with: studying of world educational experience in order to identify its adaptive educational potential and constructive use in a higher education institution; analysis and expert assessment of foreign technologies introduced in the educational process of Russian higher education institutions; introduction of innovative training technologies and interactive methods. The variety of modern technologies of vocational education and their insufficient approximation for the target and address training of future competitive experts of a humanitarian profile determines the urgency of this direction development.

3.3.1 Solution of the given task

The solution of this task included: SWOT analysis of educational technologies of the Higher school of ITIS KFU (analysis of classes at the Higher school of ITIS KFU to define strong and weak points, advantages and shortcomings of technological support of basic educational programs, development of technological guidelines of the Institute to provide high quality educational results); development of a training program and master-classes of modern educational technologies application for KFU teachers; development and introduction of MULTITECHNOLOGY training technology the basis of which make the ideas of TRUMP plan for first-year students of the Institute of Psychology and Education; calculation of

a training algorithm at the university for each separate module of the studied discipline, including all lectures and practical training, individual consultations and independent work; development of advanced training courses for teachers: "Innovative methods in education on the basis of the Singapore system" (40 people), training seminars for students "Possibilities of the Singapore training method at school and higher education institutions" (65 people) ; some changes (on the pilot basis) in TMC and educational process organization on the basis of a cooperative training method for first-year students (the direction: "pedagogical ("primary education") for disciplines "Phonetics", "Natural sciences", "Age psychology", "History of native literature"; diagnostics of the Singapore training method efficiency at the Institute of Psychology and Education at KFU; development of an interactive construct (model); publication of the study guide "Practice of interactive training" for teachers of higher education institutions the main purpose of which is to develop and improve teachers' abilities to arrange classes; creation of experimental platforms at the Institute of Psychology and Education and Elabuga Institute of KFU; training, diagnostics and introduction of interactive practices by teachers of the Institute of Psychology and Education and Elabuga Institute; development of expert assessment criteria of interactive practices application results by KFU teachers in various educational programs.

3.3.2 Reserves and recommendations

The following is necessary due to the results of the given research task solution: increase of training technologies share aimed at students' independent work arrangement, and wide use of information technologies, technologies of distance and project learning, reflexive technologies in combination with technologies of critical thinking development, research technologies etc.; reorientation of teachers' activity from information to organizational in the sphere of students' independent, educational, informative, research and vocational activity management; expert assessment of foreign technologies; promotion and improvement of the training process quality; development of students' intensive cognitive activity; formation of students' high standard knowledge, abilities and practical skills to use information technologies; creation and ensuring students and teachers' access to information educational resources; extension of students' independent work; use of modern ways to monitor knowledge; designing of interactive training technologies according to the variability of programs of higher education and individual educational trajectories; development of recommendations on interactive training technologies adaptation in educational process; increase of experimental platforms at KFU Institutes; improvement of higher education quality in the conditions of interactive training technologies integration.

3.4 Development of information-methodical support of educational process at a higher education institution

The necessity to develop information-methodical support of educational process at a higher education institution is associated with optimization of material and intellectual investments of a higher education institution; creation of natural psychologically comfortable competitive environment due to the transparency of students' training results, and teachers' professional activity as well; development of creative approach to educational issues solution; systematic consultation and large-scale testing of students' knowledge in the network mode; appropriate correction of students' individual educational trajectory; formation of common database of applicants and students' educational achievements; creation of educational technologies bank and register of teachers' technological potential. Information-methodical support of a higher school educational process is aimed to design an electron shell of the register of teachers' psychology and pedagogical potential, creation of psychologically comfortable educational environment, approbation of Big Data technology in the research of educational process at a higher education institution.

3.4.1 Solution of the given task

In the course of the task solution, key parameters, indicators, criteria have been developed in order to create a database; systematization, analysis, classification of obtained information has been implemented; the electron shell which is in an open entry for all KFU teachers has been created; KFU site, personal pages of the KFU teaching staff have been updated; consultation (individual and group), psychology and pedagogical education and training of KFU teaching staff to develop their psychology and pedagogical competence (lectures, advanced training courses, schools of sciences, schools of pedagogical skill, etc.) have been conducted; correctional developmental work with KFU teaching staff has been arranged; comprehensive (psychological, pedagogical, methodical, legal, social) help regarding matters arising in the process of work has been rendered to young specialists; indicators to study educational process at a higher education institution have been defined so as to apply Big Data technology; Big Data technology has been developed and introduced in the research of an educational process at a higher education institution; the efficiency of introduced Big Data technologies in the conditions of innovative educational processes has been estimated.

3.4.2 Reserves and recommendations

The following has been proposed due to the results of the conducted research: register's electron shell designing of teaching staff psychology, pedagogical and methodical potential (identification of leading experts in different directions with labour market demands in view, advanced training courses, scientific conferences, researches, etc.); inclusion of main results in Big Database; creation of psychological consulting centers for teachers and students at a higher education institution; encouragement of teachers for self-development, self-education, motivation for professional excellence achievement; increase of personal, methodical and professional growth of the KFU teaching staff; creation of conditions for young specialists' successful adaptation to teaching activity in a higher education institution; creation of psychologically comfortable educational environment; storage, processing and analysis of educational process indicators at a higher education institution in a real-time mode, continuous addition and comparison of already received information with new information of different structures and with various speed of replenishment from external sources for the purpose of educational process quality improvement at a higher education institution; identification of barriers and resources which are complicating/promoting the formation of a successful educational policy, students' individual educational trajectory formation, and teachers' individual professional and methodical trajectory of development at a higher education institution; development of recommendations on effective educational policy management at a higher education institution and information methodical support of educational process; development of interfaculty projects on the basis of data obtained due to Big Data technologies.

4. Conclusions

Thus, the solution of the designated research objectives allowed to create students' motivators database at a higher education institution to carry out appropriate correction of educational process; to develop students' educational achievements base, to reveal barriers and resources complicating or promoting successful educational policy formation, and to develop individual educational trajectories with students' personal growth results in view; to develop a system of faculty motivation; to develop modular educational programs for applied baccalaureate on the basis of a competence-based approach as a main model of training specialists realized in the network interaction of KFU institutes, organizations and partner enterprises; to realize programs of practical modular magistracy to provide a fast entry to a profession; to design register's electron shell of the teaching staff's psychology, pedagogical and methodical potential (identification of leading experts in different directions with

labour market demands in view, advanced training courses, scientific conferences, researches, etc.); to develop recommendations on effective educational policy management at a higher education institution and information methodical support of educational process; to develop tools of data intellectual analysis (Big Data) directed to the assessment of educational process quality at a higher education institution.

Acknowledgments

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University

References

- Gabdulchakov, V. F. (2014). Pedagogical Skills of the Teacher and the Degree of Creative Self-realization of a Student in Conditions of University Educational Space. *Procedia - Social and Behavioral Sciences*. Third Annual International Conference «Early Childhood Care and Education», 146, 426–431.
- Gafurov, I.R., Platonova, O.U., Pratchenko, O.V. (2014). New state economic policy - Cluster policy cluster policy as the factor of innovative development of Europe. *Mediterranean Journal of Social Sciences*, 5 (12) , 107-112.
- Kalimullin, A. M. (2014a). Processes of reforming teacher training in modern Russia (experience of the Kazan federal university). *American Journal of Applied Sciences*, 11(8),1365-1368.
- Kalimullin, A. M. (2014b). Improvement of teachers' qualification at Kazan federal university. *World Applied Sciences Journal*, 30(4), 447-453.
- Parfilova, G. G., Karimova, L. S. (2015). Study of university students' social competence development. *Review of European Studies*. 7 (5), 10-16.
- Safiullin, L. N., Gafurov, I. R., Shaidullin, R. N., Safiullin, N. Z. (2014). Socio-economic development of the region and its historical and cultural heritage. *Life Science Journal*, 11 (6 SPEC. ISSUE), 400-404.
- Sakhieva, R. G., Khairullina E. R., Khisamieva L. G., Valeyeva V. S., Masalimova A. R., Zakirova V. G. (2015). Designing a structure of the modular competence-based curriculum and technologies for its implementation into higher vocational institutions. *Asian Social Science*, 11 (2), 246-251.
- Valeeva, R. A. & Karimova L. Sh. (2013). Research of Future Pedagogue-Psychologists' Social Competency and Pedagogical Conditions of its Formation. 3rd world conference on educational technology researches, 2013, *WCETR 2013. Book Series: Procedia Social and Behavioral Sciences*, 131, 40-44.
- Vlasova, V. K., Kirilova, G. I., Sabirova, E. G. (2015) Functioning of information educational environment: Meta dynamic approach. *Review of European Studies*, 7 (5), 25-30.
- Zakirova, V. G. & Koletvinova N. D. (2014). Paradigm of future primary school teachers' vocational training. *Life Science Journal*, 11(4), 441-447.