International Review of Management and Marketing

ISSN: 2146-4405

available at http: www.econjournals.com

International Review of Management and Marketing, 2016, 6(S1) 165-171.

Special Issue for "Socio-Economic and Humanity-Philosophical Problems of Modern Sciences"

# In-University Quality Management System of Education Based on the Competence Approach

**Elena G. Nelyubina[1]*, Liliya G. Safina[2], Lyudmila V. Panfilova[3], Ivan V. Kazantsev[4], Sergey L. Molchatsky[5], Ekaterina S. Stepanova[6], Sakinya Ab Ibrahimova[7]**

[1]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [2]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [3]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [4]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [5]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [6]Volga State Academy of Social Sciences and Humanities, Samara, Russia, [7]Volga State Academy of Social Sciences and Humanities, Samara, Russia. *Email: geo_f@pgsga.ru

**ABSTRACT**

This article considers the system forming elements of the concept of quality of natural science education in the field of providing educational and research services of higher education. The authors have proposed a model of quality management of the higher education establishment work based on the working processes and the competence approach to education. The basic elements of the model of quality management of higher education establishments' work based on the working processes and the competence approach to education are defined; the criteria and sub-criteria allocated from the point of view of their development by the levels of perfection or stages of development are set up. The necessity of implementation of the in-university quality management system of the quality of higher education establishment's work on the basis of the working processes and the competence approach to education is substantiated, based on the principles of the students' activity and the need to introduce innovative and interactive forms of organization of the educational process by using modern communication and educational technologies.

**Keywords:** Educational Innovations, Higher Education, Professional Competency
**JEL Classifications:** I23, O3

## 1. INTRODUCTION

In the modern education of Russia, when there are active changes in information, scientific and technical life, the idea of qualitative education and improving its quality is particularly acute. Modern education system has relied on information technology and computer telecommunications increasingly. The system of distance learning is developing especially dynamically, aided by a number of factors, and mostly by equipping educational institutions with powerful computers and development of the internet networks' community.

Lecture and seminar form of training has lost its effectiveness long time ago - the practice proved that nearly 50% of study hours is wasted. Studying foreign experience, we can distinguish the following important aspect: The teacher acts not in the role of the distributor of information (as it is done traditionally), but in the role of a consultant, an advisor, sometimes even a learner's colleague. This gives some positive points: Students participate more active during the learning process; they learn to think independently, to introduce their point of view, to simulate real situations.

The key objective of vocational education is currently considered as the formation of such a complex structure as a professional competency. The competences for the student are the image of his future, a landmark for mastering. Educational competencies reflect the subject – activity component of general education; they are aimed to ensure a comprehensive attainment of its objectives. Thus, an electronic textbook is a means of competences development of the students of pedagogical universities.

The development of information technologies has provided a new and unique possibility of the lessons organization – conducting them with the help of electronic textbooks. Firstly, it allows the learner to choose the time and place for learning, secondly, it gives the chance to receive education for those, who are disable to obtain the traditional forms of education because of various reasons, thirdly, to use new information technologies in studying, fourthly, to some extent, it reduces the cost of the training. On the other hand, learning using electronic textbooks increases the possibilities of individualization of learning. This fact solves the problems of education, which are very acute in traditional teaching methods.

The advantages of electronic textbooks in Chemistry, in our view, are the following. At first, it is their mobility; at the second, it is the availability of communications with the development of computer networks; and at the third, the adequacy with the level of development of modern scientific knowledge. On the other hand, the creation of electronic textbooks in Chemistry also contributes to the solution of such a problem as the constant updating of information material. They may also contain a large number of exercises and examples; different types of information can be illustrated in the dynamics in them. In addition, with the help of e-books the control of knowledge - computer testing - is held.

The practice of using electronic textbooks in Chemistry showed that the students learn the described material efficiently; this fact is reflected by the test results. Thus, the development of information technologies provides a wide opportunity for invention of new methods and techniques in education and thereby improves its quality.

## 2. LITERATURE REVIEW

The theoretical and methodological basis of the research was made of: The philosophical vision of informative society; the humanistic ideas of socio-cultural orientation of education; the study of value-motivational sphere of personality, the concept of construction of education, the technology of education, the concept of personality-oriented education; the terminological definition of the concepts like “a competence,” “a competency,” “professional and information competency” based on works of the foreign and Russian authors; the conceptual approaches of professional development; the ideas of context and context-competency approach in vocational education; the fundamental developments in the field of informatization and implementation of media means of education, the pedagogical theories of social experience formation under the impact of the information space and the idea of pedagogical project work (Nelyubina, 2005).

While solving the stated problems and justifying the conclusions the following methods were used: Theoretical and practical.

## 3. RESULTS AND DISCUSSION

In recent years the problems of the quality of natural science education in the field of providing educational and research services in higher education has got a recognized actuality.

The quality of education is a set of characteristics of professional consciousness, reflecting the ability to perform professional activities in accordance with the requirements of the modern stage of economic development, at a certain level of performance and professional success with an understanding of social responsibility for the results of one’s professional activity (Kivlyuk, 2014).

The quality of natural science education characterizes not only the result of educational activity – the characteristics of a specialist as a graduate of a higher educational institution, but also the factors of the existence of this result. They are:

- The quality of the goal of education (seen by the education authorities, teachers and students);
- The quality of potential in education (resources and conditions of their use);
- The quality of the legal-organizational equipment of education;
- The quality of a student and student groups;
- The quality of teaching staff and teachers;
- The quality of logistical support of educational process;
- The quality of information (bibliographic) and methodological support;
- The quality of educational program and technology of education;
- The quality of educational work in the higher education establishment.

All those are the characteristics, which formation is in need of being deliberately affected, and must be managed. What should the mechanism for such management be like, how is to form and use it? It is impossible to expect a solution of the problem without answering this question. By means of strengthening the requirements to the quality of education you can achieve some improvement, but it won’t solve the problem fundamentally (Stetsenko and Yaschuk, 2014).

The successful solution of the problem of the quality of natural science education is mainly determined by the availability of scientific concept, which provides a framework of practical actions in this direction (Alehin, 2014). Currently, however, sometimes there are many different approaches to both the understanding of the quality of education and the ways and means of its increase. In one case the main focus is on the qualification of teaching staff, in the other it’s on the technology of education, in the third it’s on the composition and structure of academic disciplines. Of course, all these are very important factors of the quality formation, but they appear only in their interaction, which depends largely on the general and specific conditions of the development of education. In addition, a set of quality factors is very extensive and varied, and must be considered in its entirety of composition and interactions. It is necessary to develop a system of quality motivation and integrated management of all its aspects. It is also important that all the participants of educational process – from students to educational and support staff - should be involved in the solution of quality problems (Gaynutdinov, 2014).

Education needs the system of quality management that each higher education establishment must have. Such system

is impossible without a modern, comprehensive system of evaluation of both the quality of education in the whole and its components separately. The more accurate the estimation is held and the characteristics are taken into consideration the better the quality of education can be controlled (Robert, 2014).

Besides the evaluation of conformity degree of the results of the process to the requirements, we must have a conclusion on the quality of the process of providing these services, i.e., how perfect, ordered, organized, stable, secured it is and if it is aimed at preventing the occurrence of deviations or discrepancies, etc. This will provide an objective assessment of the quality of the results of educational and research services of the higher education establishment.

Thus, the quality of the results of the higher education establishment work should be provided by the management of the quality of its core business processes. A measure of the quality of such processes is usually the degree of assurance that the provided educational or research service will exactly meet the requirements of the consumer (Nelyubina, 2005).

The proposed model and criteria of the effectiveness of the in-university quality system can be used for a self-evaluation and identification of the ways of improvement of the higher education establishment work, and will also let the higher education establishment prepare for an external check during the certification examination. The self-evaluation can be conducted at different levels: At the level of the higher education establishment as a whole, at the level of a faculty, a department or a structural unit. An assessment of the quality system of the higher education establishment can be made according to several criteria. Each of the selected basic criteria is divided into a number of sub-criteria in the view of the stages of their development (Table 1).

Thus, the quality of the results of the university work shall be ensured through the quality management of their core business processes. A measure of the quality of such processes is usually the degree of assurance that the provided educational or research service will exactly meet the requirements of the consumer. Leadership, staff and teachers of the higher education establishment should understand current and future needs of their customers fulfill their requirements and endeavour to exceed their expectations (Bobkova et al., 2015a).

**Table 1: The description of effectiveness criteria within the system of interior higher education quality**

| Groups of criteria | Criteria |
|---|---|
| Criteria of the group "Opportunities" | Criterion 1: The leading role of supervisors |
| | Criterion 2: Policy and strategy |
| | Criterion 3: Staff management |
| | Criterion 4: Resources and partners |
| | Criterion 5: Processes management |
| Criteria of the group "Results" | Criterion 6: Customers' satisfaction |
| | Criterion 7: Personnel's satisfaction |
| | Criterion 8: The university impact on society |

If the higher education establishment has the quality system built on the principles of the total quality and the process-oriented approach, it will guarantee that the provided educational and research services will exactly match the consumer's requirements and, according to this, will allow to maintain and strengthen the strategic position of the higher education establishment (Bobkova et al., 2015b).

In modern Russia, when there are active changes in the economic and scientific and technical life, the idea of continuous education and its quality improvement is particularly acute. Some special requirements to the quality of the training are stated as well. The key objective of vocational education is currently considered to be the formation of such a complex structure as the professional competency.

A competence (Latin competentia) means a range of issues in which a person is well-versed, has the knowledge and experience (Nelyubina, 2005).

The trends of European education have never been indifferent for Russia. But our education has always chosen "its own way" associated with the specifics of the national traditions and processes. The trend to strengthen the role of competence in education will be no exception either.

One of the key "European" competences is the competence in the sphere of cultural and leisure activities, that comprises the development of free time investigation techniques, in particular. The competence in the field of general culture, spiritual life and activity is much more important. The problem of free time is not the cause but the result of the presence or absence of cultural competence of a person, which is really the key competence and highly relevant to the modern state of the national education.

To separate general and personal components of the content of education, we'll distinguish the concepts of "a competence" and "a competency" used as synonyms (Nelyubina, 2005).

A competence is a set of interrelated personal qualities (knowledge, abilities, skills, ways of work), set in the relation to a certain circle of objects and processes and required to be efficiently productive to act against them.

A competency is an ownership, a possession of an appropriate competence by a person, including his personal attitude towards it and the subject of activity.

In other words, a competency is always colored by the personal qualities of a certain learner. There is a great amount of such qualities varied from semantic and ideological (for example, why I do need this competence), to reflexive and evaluation (how well I apply it in my life).

The competency implies a minimal experience of using the competence. It is important not to forget this fact while formulating verifiable requirements to the student's preparation and designing textbooks and teaching process.

There are the following functions of competences and competencies in relation to student's individual qualities. They:

- Reflect and develop personal meanings of a student in the direction of the objects of the studied areas of reality;
- Characterize the activity component of the student's education, the degree of his "isolation" and practical training;
- Define the minimum experience of the subject activity;
- Develop the ability to solve the real problems of everyday life – from household to industrial and social ones;
- Are multidimensional, i.e., they include all major groups of personal qualities of a student which are being developed;
- Represent integral characteristics of the students' training quality;
- Combine to determine and reflect the functional literacy of a student.

Currently there are a number of attempts to define the concept of competence from an educational point of view.

Competence is not only an individual psychological feature, but an overall quality, standardized for many individuals, represented as a general standard. In addition, competence includes a range of real objects, which it is given to, and provides mastering a complex educational procedure with the personal activity nature (Nelyubina, 2005).

In relation to the structure and the content of education competences:

- Present the opportunity to design the objectives, the content of education (educational standards) and educational technologies in systematic approach;
- Are meta subject, i.e.. they are found in various subjects and educational areas either integrally or through separate elements;
- Are versatile, because they allow students to solve problems from different spheres of life;
- Are formed by means of educational content.

In relation to methods of operation the competences:

- Allow the use of theoretical knowledge to solve specific tasks;
- Allow creating precise measuring instruments to check the students' success in learning them;
- Are checked in the process of performing a certain complex of actions.

Educational competence is a totality of interconnected semantic orientations, knowledge, abilities, skills and experience of a student, necessary to make personal and socially meaningful productive activities in relation to the objects of reality.

A competence for a student is an image of his future, a landmark for the development.

Educational competences reflect the subject activity component of the general education; they are designed to ensure a comprehensive attainment of its objectives.

After defining the notion of educational competences, it is necessary to figure out their hierarchy. In accordance with the division of the educational content on general meta-subject (for all subjects), interdisciplinary (for a cycle of subjects or educational areas) and subject (for each subject), we offer a three tier hierarchy of competences:

- Key competences, related to the general (meta-subject) content of education;
- General subject competences, related to a certain circle of subjects and educational areas;
- Subject competences, that are private in relation to the two previous levels of competence, and have a specific description and the possibility of the formation within the subjects.

Thus, the key educational competences are concretized at the level of educational areas and subjects for the each stage of training.

A list of the key educational competences is defined on the basis of the main purposes of general education, the structural representation of social experience and the experience of an individual, as well as the core activities of the learner, enabling him to master social experience, to receive life skills and practical activity skills in society.

1. Value – semantic competence. This is a competence in the sphere of worldview, connected with the values of students and their ability to see and understand the world around us, to navigate, to understand their role and purpose, actions and deeds, to make decisions. This competence provides a mechanism for student's self-determination in situations of educational and other activities. The individual educational trajectory of a student and the program of his life in general are dependent on it.
2. Cultural competence is a range of issues in which students should be knowledgeable, have knowledge and working experience. These are national and universal culture features, spiritual and moral foundations of a human and humanity life, the life of individual nations, the cultural foundations of family, social and public phenomena and traditions, the role of science and religion in human life, their effect on the world; competences in domestic, cultural and leisure activities, for example, knowledge of effective ways of organizing free time.
3. Educational-cognitive competence. It's a set of student's competences in the sphere of independent cognitive activity, including elements of logical, methodological, educational activities, compared with the real knowable objects. This includes the knowledge and skills of goal-setting, planning, analysis, reflection, self-evaluation of educational-cognitive activity. The student possesses creative skills of productive activities: Extraction of knowledge directly from the reality, knowledge of the methods of action in unusual situations, heuristic methods of problem-solving. In the framework of this competence the requirements of the relevant functional literacy are determined: The ability to distinguish facts from fiction, the possession of measuring skills, using probabilistic, statistical and other methods of cognition.
4. Informational competence. The ability of independent search, analysis and selection of information, organization, transformation, preservation and transmission of it is formed using real objects and information technologies. This competence provides the skills of the student's work with the

information contained in educational subjects and educational areas, as well as in the world around.

5. Communicative competence includes knowledge of the necessary languages, ways of interacting with others and remote people and events, skills of a group work, possession of different social roles in the team. The student should be able to introduce himself, write a letter, a questionnaire, a statement, ask a question, lead a discussion, etc. To master this competence in the learning process, one fixes necessary and sufficient amount of real communication objects and ways of work with them for the student of each study level within each studied subject or educational field.
6. Social and labor competence means the possession of knowledge and experience in civil-social activities (playing the role of a citizen, an observer, a voter, a representative), in social and labor issues (the rights of a consumer, a buyer, a customer, a manufacturer), in the field of family relations and responsibilities, in the matters of economics and law, in professional self-determination. This competence includes, for example, the ability to analyze the situation on the labor market, to act in accordance with personal and societal benefits, to hold the ethics of labor and civil relations. The student possesses the minimum skills of social activity and functional literacy required for life in contemporary society.
7. The competence of personal self-improvement aims to master the methods of physical, spiritual and intellectual self-development, emotional self-regulation and self-support. The real object here is the learner himself. He takes the ways of acting according to his own interests and capabilities, which is reflected in his continuous self-knowledge, the development of personal qualities necessary for a modern person, the formation of psychological literacy, culture of thinking and behavior.

The analysis of the foreign and Russian works on the problem of competence and competency allows you to allocate three conditional stages of the generation of competency approach in education.

The first stage (1960-1970) is characterized by an introduction of such category as "a competence" to the scientific apparatus, creating the preconditions for the differentiation of the concepts of a competence/a competency.

The second phase (1970-1990) is characterized by the use of the category of competence in the theory and practice of language teaching, by professionalism in management, leadership, teaching of communication; the concept of "a social competence/competency" is being developed.

The third stage of the competence research as a scientific category in relation to education, which started in 90s of the last century, is characterized by the appearance of works of Markova, where the professional competence becomes the subject of a special comprehensive examination in the general context of labor psychology. Markova defines four blocks in the structure of the professional competence of teachers:

a. Objectively necessary professional psychological and pedagogical knowledge;
b. Objectively necessary professional pedagogical skills;
c. Professional psychological positions, directive of a teacher, required by his profession;
d. Personal features providing mastering professional knowledge and skills by the teacher (Nelyubina, 2005).

Today in our country the terms "a competence," "a competency" are increasingly used discussing the new quality of education to indicate its new result. That's the way this term sounds like in the Russian Concept of modernization of education. However the discussion on the concretization of the meaning of the term "a competence" is going on in the pedagogical community. Which of them are the key or universal? What are their methods of formation and evaluation like? These questions are under the discussion too.

The problem of selecting a key educational competence is a target for updating the content of natural science education. All key competences have the following characteristics:

1. Key competences are multifunction (competences are a key, if the mastery of them enables to solve various problems in everyday, professional, social life; they need to be mastered to achieve different objectives, to solve complex problems in different situations);
2. Key competences are above subject and interdisciplinary, they are applicable in different situations;
3. Key competences require intellectual development: Abstract thinking, self-reflection, determination of one's own position, self-evaluation, critical thinking, etc.;
4. Key competences are multidimensional, i.e., they involve mental processes and intellectual skills (analytical, critical, communicative, etc.).

We may say that key competences show concentrated and interconnected embodiment of all the components of general subject content of education: The real objects of reality being studied; general cultural knowledge about the reality being studied; general and general study skills, and generalized ways of activity.

Thus, the formation of professional competence of students is based on the system of key educational competences that relate to the thematic general subject content of education, to the mastering of scientific concepts, categories, etc., as well as to the mastering of self-organization, planning, reflection, self-esteem and other similar ways of activity. Educational competences of a student are the result of a person-activity approach to education and are formed only in the process of performing the corresponding set of actions.

The concept of a competence includes complex, capacious content that integrates professional, social-pedagogical, psychological, legal and other characteristics. In summary, the competence of a specialist is a set of abilities, properties and personal qualities necessary for a successful professional activity in a particular area. The criterion of a professional competence is the public significance of the results of the specialist's work, his influence, socio-occupational status in a certain sphere of knowledge (activity).

Summarizing, we can state that professional competence can be represented as a number of interacting and interpenetrating

formations. The structure of this competence is formed by substantive, activity and personal components.

Substantive (base) component requires a specialist's certain theoretical knowledge of the basics of fundamental and applied Sciences that provides the awareness during the specialist's determination of his professional activity content.

Activity (practical) component includes professional knowledge and skills, tested in action, mastered by the person as the most effective (Nelyubina, 2005).

Personal component includes professional and personal qualities that define the position and orientation of a specialist as a personality, an individual and a subject of activity.

Professional competence is a dynamic phenomenon, since it depends on many factors, including the development of associated with the professional activity branches of science. By engaging in an independent practical activity, yesterday student passes a series of stages, providing the transition from the acquired at the higher education establishment theoretical readiness to perform professional activities to a highly productive, creatively intelligent, individual style of activity, when all the professional competences of a specialist are connected and interacted.

Tsyganov introduced a category of invariant "Independent Students' Work – competence" into the conceptual research and teaching unit, considering it as a complex phenomenon consisting of informational, technical, human and organizational components, and interpreted it as an ability/willingness to update the system of mental and personal qualities to solve the problem "learn how to learn" (Nelyubina, 2005).

This definition makes clear the fact that he states as a professionally significant competence not only the conceptual one, but also such competences as informational, technical, cognitive and organizational. Without their formation and development it becomes problematic to carry out the basic professional functions of the teacher (informative, analytical, pedagogical and communicative).

Information competence is an ability/willingness to mobilize the knowledge, skills, mental qualities needed for the search, the "collapse" of information, the fixation and assimilation of its large volumes. This competence allows not only to carry out library or Internet search, but to perceive the semantic content of the text very fast (3-5 times faster than normal speed) using the methods of dynamic reading. It allows to highlight the semantic units of the text, combine, "collapse" them in larger information units (and very large ones called descriptors) and to have time not only to listen to the lecturer and put down the lecture as a dictation, but to fix it on a paper using the methods of empathetic listening and speed note-taking. This system of operating sense making actions, based on the semantic memory, concentration and switching attention, which are the basis of professional thinking, must be recognized, and then formed on a subconscious level (as habits).

The formation of primary professional skills of a freshman is also stimulated by the development of technical competence, which is the ability to process some printed information by technical means. This type of competence allows you to speed up the production of texts (test works, term papers, and reports) significantly, saving time on taking notes.

The formation and development of a professional teacher as an active subject of educational process are now very significant, particularly in the development of professional standards of pedagogic activity. In this regard, new approaches to define goals, objectives and principles of education are being developed, the necessity to revise the content of education is being explained, and new forms, means and methods of teaching from the standpoint of the competence approach are being developed.

All the components of ICT-competence of future teachers are interrelated and interdependent. On the theoretical analysis basis, taking into the account the combination of different levels of mastering these competences, Nelyubina identified four levels of formation of information and computer competences.

The initial level involves mastering the information and computer competence at the level of a senior pupil of a secondary school, which is reflected in the standard of general secondary education in informatics and ICT. At this level a future teacher has a general idea in Informatics and ways of application of information technology; he shows interest in working with a computer, but does not seek to give valuable assessment to information. It assumes the possession of basic techniques for working with computer hardware and software. Group interaction is contextual in nature, but several solitary instances of using computer skills as means of communication may occur. Observation showed the absence of a holistic view of the possibilities of using the computer. Reflection is weak, i.e. there is lack of adequate assessment of oneself and one's possibilities (Nelyubina, 2005).

Algorithmic (reproductive) level is characterized by the actions of students according to the algorithm, created by a teacher. Future teachers learn programming languages and create software products either similar or according to the algorithm of a teacher. They show interest in different types of reporting, give valuable assessment of information based on the proposed example. They own the method of analogy and master similar software products on its basis. During the lesson business communication and communication through information technology can be observed. There is an awareness of the significance of information technology in reaching personal goals; skills of self-evaluation and evaluation of others according to a given algorithm are developed.

Heuristic level is characterized by the presence of an ability to solve various problems using adequately chosen software. An interest in application of information technologies in professional activity on the basis of the created values is observed. There is an independent learning of various software products at this level. Future teachers enter into the exchange of professionally important information by means of information technology. There

is a conscious use of information technologies, as well as the self-evaluation and the evaluation of other people's development in professional sphere.

Creative level is characterized by the ability to create software on the basis of the knowledge gained in pedagogy, methodology, and Informatics and use it in professional work. Information technologies are used as tools of professional self-improvement. There is a purposeful selection of information required to create professionally meaningful products. It is possible to note the presence of the ability to conduct a professional dialogue by means of information technology, to propose problems and to look for their solutions together. There is a reassessment of the use of information technologies in personal and professional development. One's own behavior is updated through the development of empathy.

In essence the given levels of ICT-competence of future teachers represent a hierarchy of levels: Each subsequent level includes the features of the previous, and has special features that distinguish it from the previous. While the future teachers move by this "hierarchical" ladder, a new way of thinking is formed. The result of this process is that the ICT- competence of the future teachers is formed as well.

## 4. CONCLUSIONS

In conclusion, it is necessary to make a number of important observations concerning the general methodology of assessment the availability and effectiveness of the in-university quality system based on the proposed model and its potential application in self-assessments and certification expertise of the higher education establishment.

The existence of quality systems in higher education can be fixed by finding the integrated assessment on all criteria. In this case the valid values for the specified criteria should be set by the experts based on a careful analysis of the average state of quality systems at different universities. To illustrate it a "spider chart" methodology can be used. The area of "effectiveness" of the quality management system of the higher education establishment can be defined similarly.

It is necessary to develop a regulated procedure of organization of self-assessment (evaluation) of the quality system of the higher education establishment on the basis of the adopted model.

The developed model and procedure of evaluation of availability and effectiveness of quality systems should be advisory both for higher education establishments and for the experts involved in the certification procedure of the higher education establishment; and to have some tolerance to other possible models of quality systems. In accordance to the traditions and general principles of quality, the development and the implementation of the system in the organizations should be voluntary; an identical model of a quality system should not be imposed but encouraged.

## REFERENCES

Alehin, A.N. (2014), Informatization in Education: PRO VEL CONTRA. Vol. 2. Universum: Bulletin of the Herzen University. p121-123.

Bobkova, E.Y., Korobejnikova, E.V., Nelyubina, E.G., Likhman, V.A. (2015a), Pedagogical problems of effective training of specialists in international virtualization of economic industry. Mediterranean Journal of Social Sciences, 6(3S4), 17-24.

Bobkova, E., Korobejnikova, E., Nelyubina, E., Birina, O., Safina, L. (2015b), The conceptual aspects of the innovative format of the distance learning system within modern conditions of the higher education system informatization. Mediterranean Journal of Social Sciences, 6(5S3), 131-139.

Gaynutdinov, R.G. (2014), The development of the lecture as a form of learning in higher education in terms of education informatization. Kazan Pedagogical Journal, 2(103), 157-163.

Kivlyuk, O.P. (2014), Globalization and Informatization of education in the subject field of philosophy of education. Humanitarian Bulletin Zaporozhye State Engineering Academy, 57, 192-200.

Nelyubina, E.G. (2005), Formation of Ecological Competence of Students of Pedagogical High School the Integrative Design Method. (Thesis for the Degree of PhD Specialty). Samara State Pedagogical University, Samara, Russia.

Robert, I.V. (2014), The development of the lecture as a form of organization of learning in higher education in the conditions of informatization of education. Kazan Pedagogical Journal, 4, 199-204.

Stetsenko, I.A., Yaschuk, E.V. (2014), The e-learning technology in the system of continuous pedagogical education (experience of the laboratory of problems of informatization of education). Bulletin of the Siberian Institute of Business and Information Technology, 1(9), 94-97.