

## The Structure of the Managerial System of Higher Education's Development

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### ABSTRACT

The research urgency is caused by necessity of planning regulation of higher education development at all levels of management. The purpose of this article is to develop the structure of a control system of higher education development, the Foundation of which is understanding of the quality of higher education as factor for development of the system and reconcile of the education agents' interest. Based on the definition of levels, types of control and methods for subordination, the authors have developed an innovative governance structure with the development of higher education system, including: a set of agents of higher education system; a set of relations between entities of management of higher education's development; the sequence and dynamics of functioning; criteria for management of higher education system; a set of normalized states for agents of higher education; the level of awareness of higher education' agents in making managerial decisions. This article is intended for researchers and specialists in the field of development of higher education.

### KEYWORDS

Higher education system, management of development, system of management, regulation of management, agents of education

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## Introduction

Socio-economic challenges of society, technological breakthroughs and the crisis of an educational system determine new possibilities and requirements that significantly change the goals, objectives and conditions of higher education. Selected external systemic (globalization, regionalization, democratization, humanization, continuity, diversification and integration) and internal systemic trends (standardization, competency-based paradigm, activity-

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based orientation of education, ensuring of equal opportunities of education) of higher education development (Mukhametzyanova, 2009; Shcherbakov, 2005), conceptually describes directions of development of the higher education system in the world.

It is noted that the system of higher education is a priority in all over the world, and (except the US) is under the control of the state (or aspires to it) (Shaton, 1999; Saprykin, 2005; Belyakov, 2009; Vakhshstein, 2006; Felt & Glanz, 2004; Van Vut, 1995). Still the education systems in that or other scale are experiencing a period of transformation caused by socio-economic factors; all the European educational systems to a greater or lesser extent, reflect "the effect of 1992" caused by the implementation of the Bologna agreement; there is clearly a trend to reduce the role of educational traditions in the education system; the state models strive to market models (economically viable); the traditionally independent models, in one way or another, begin interaction with the state; elements are introduced of alien educational systems, leveling national traditions in the field of higher education; mass generalization of education leads to a decline in the quality of education in General (because lower levels are unable to master challenging educational curricula, there are language barriers, etc.) and the aggravation of many social problems. It is found, that many foreign, especially European higher education systems are undergoing modernization, caused by the attempts of unification of educational systems during the adoption of the Bologna agreement and the geopolitical crisis, which naturally aggravated many social problems and largely reduces the positive effect of educational reforms.

The allocated tendencies of education development require systematic innovations in the implementation of advancing education, when the educational system forms beliefs, attitudes, living conditions, defining the intelligence (knowledge) as an important national resource. It should be emphasized that changing of the role of education should be a controlled process, and only in this case one can speak about its efficiency and effectiveness, as well as the possibility to minimize the negative effects of the consequences of the reforming.

In general, management of higher education is determined by the following factors: state policy in the field of education, economic condition of the country (market), the level of development of technology and innovation, the impact of market relations and business structures; therefore, in conditions of instability of external (with respect to higher education) and internal environment the question arises to develop the structure of a control system of development of higher education, to reduce the risk of educational reforms through adaptive mechanisms (Levina et al., 2015).

## **Methodological framework**

### ***Management of higher education: modes and objects***

Organization, orderliness and purposefulness of the educational system at all its hierarchical levels are determined by the existing control system that ensures the regulators of transition from one state to another. B.M. Bim-Bad (2002) stresses that "the educational system can work in two modes: functioning and development, thus, in functioning mode the goal is efficient use of the existing educational system capacity, increasing of its effectiveness" the object of management – teaching and educational processes. The division of the "modes"

of the educational system's states must be indicated: functioning (the most efficient use of resources (personnel, technology, funds) capacity of the education system with the planned performance) and development (sustainable functioning under conditions of positional changes in the system at compliance with the requirements to the efficiency – achieved level of education). The development of education suggests state's positive changings through implementation of functioning's innovative mechanisms.

On this basis, management of education's development is defined as the management of educational activities in terms of methodological, organizational, content and technological transformations. The performance of management of education's development is reflected in the continuous improvement of the results of educational activities for all the considered positions. To manage the development of education, we have determined the progressive social changes of the results of education; the object of controlling of education's development is educational activities and ensuring its processes. Strategic solutions aimed at fundamental changes in education (management of development) define the methods of impact on the system, managing the functioning.

In terms of the research, the paper describes the control system of development of higher education at all levels of the hierarchy as an organization of influence on the totality of the elements of the system of higher education in each of the hierarchical levels through processes that ensure the functioning of the system with a given performance. The multidimensionality of educational institutions of higher education (Federal universities, national research universities, technical universities, municipal universities and institutions); various stages of higher education (bachelor, specialist, master); various possible trajectories of education for each student, determines the possibility of multifactorial descriptions and divergent paths of development for each institution of higher education, and emerging from it the educational system. That is, the nature of management is changing, gaining the status of development's management, and requires flexibility, adaptability, situational, and dynamic adjustment of goals, objectives and concepts of management in the implementation of the idea of social responsibilities of each participant in the educational system for their actions.

### ***Borders for control of higher education's development***

Management of education's development (as the management itself) can be considered:

- from the standpoint of management of educational levels (preschool, General, vocational, higher);
- from the standpoint of the hierarchy of education's management (Federal, regional/municipal, level of educational establishment);
- from the standpoint of resource management (processes / provision of education): legal, personnel, material, methodical, etc.);
- from the standpoint of management of the educational and pedagogical processes (pedagogical management);
- from the standpoint of learning management (self-management and self-development).

Considering higher education as a system (a subsystem of the education system), it is necessary to define: the basic elements of the system; the

hierarchical relationships between the elements of the education system; the interaction between the elements of the education system (laws of the system); external conditions for functioning of the higher education system (background of the system).

From the standpoint of the present study, we consider the higher education system through the following hierarchy and the interrelationship of its elements:

- the bodies carrying out the state control in the sphere of education, and local governments, the bodies responsible for licensing and supervision of educational activities in higher education;

- Federal state educational standards - adopted at the Federal level, the mandatory requirements for the higher education level in the relevant specialty or field of study.

- educational organizations of higher education, implementing educational activities;

- educational curricula – a set of documentation that defines the volumes, plans, contents, requirements to learning outcomes;

- agents of higher education (stakeholders, all those who are interested), which are subdivided into participants of educational relations (employees of educational institutions, faculty and learners (students, personality) and participants of relations in the field of education (the state, employers, society (parents, students, community organizations)).

The structure of the higher education system is determined by the following restrictions of development's management from the standpoint of systems theory (Mukhametzyanova & Levina, 2015):

- the capacity of the higher education system largely depends on the type of organization of interaction of its elements and their qualitative characteristics;

- the higher education system is characterized by a high degree of instability, "cause" and "consequence" may change their places;

- the higher education system can maintain stability of functioning and development through positive counteracting the negative external and internal conditions;

- structural stability of higher education system is determined by the sustainability of its weakest subsystem contributing to the performance;

- the duration of the development's cycles of systems, subsystems and elements, has different periods, with these cycles in a complex manner being synchronized with each other;

- manifestation of instability or crisis in the higher education system is observed in the external environment and internal environment, with the crisis causing the need for systemic changes in functions of development of management, while maintaining performance;

- the efficiency of the educational system is significantly below 100%.

### ***The source of development of higher education system***

Reforming of the system of higher education requires a new approach to solve a complex of strategic and tactical problems related to its sustainable development, when there is a variability of the system States with its deviations not exceeding a corridor of sustainability and limits' defining for these disturbances. One of the reasons to "start" the development cycle of education is educational communication, as the interaction of different policies, practices, tactical actions, pedagogical methods and the solutions to educational problems, i.e. information about the state of the system, which at the moment is not sustainable, generating external and internal innovation (Khatkevich, 2004; Levina, 2015).

It is justified that structuring, providing of interests and participation in the management of educational agents increases their social responsibility and contributes to the transformation of the system of development control in the area of coordinating of the financial, intellectual and social capital, providing: implementation of the rights of all agents of education in management; optimization of conditions for realization of educational activities (normative, informational, material resources); the achievement of balance of interests and satisfaction of education agents' expectations.

Searching of the zone for the balance of agents' interests in higher education is carried out based on performance of the educational system as horizontal linkages of responsibilities and interests, inevitably arising conflicts of interests and level of influence on the operation of educational systems. To improve the stability and controllability of the higher education system in these conditions, in our opinion, is possible only in case, if one chooses factor fully significant for all agents; basis, meeting and integrating the requirements and expectations of all interested groups, the mechanism of competitiveness of all the results of the higher education system.

We take the position that the basis which allow integrating the interests of all the agents of education can be the quality of education as a way to balance between requirements and properties of the final product (Juran, 1992), we justify the quality of higher education as a planned result and strategic resource, achievable through the tasks of quality planning, quality management, continuous quality improvement. Priority of such approach is determined by the following issues: 1) evaluation of the effectiveness of educational system's management development is carried out through monitoring of interacting processes, which greatly simplifies the diagnostic mechanism; 2) evaluation of the effectiveness of educational system's management development is carried out "here and now", there is no delayed effect of evaluation that allows, if necessary, to adjust the controlling actions. This position has a high value for the educational system, the functioning of which undergoes high variability of the external and internal environment; 3) significantly the search for criteria of efficiency for management of development is simplified – they are the indicators of the quality of each process, due to the implementation of the quality management system of educational institutions.

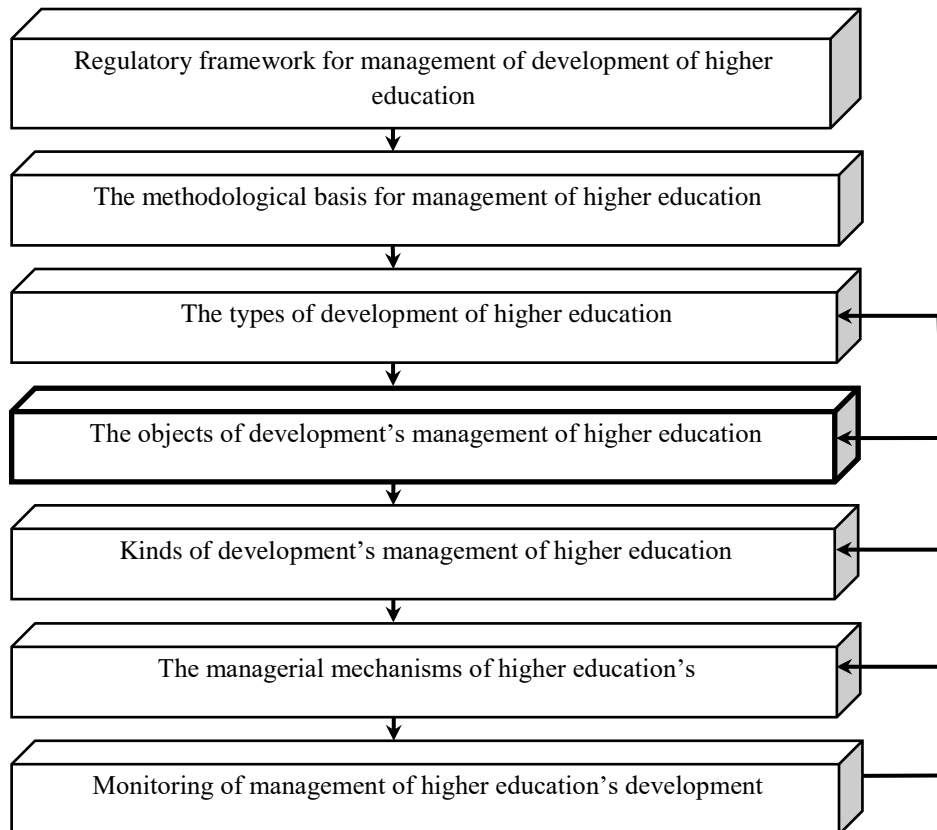
## Results

The structure of any system determines its configuration - maintaining the hierarchy, a logical representation of relations of the system's elements, communications between elements, their functions in the solution of tasks to



ensure efficient functioning. The structure of a control system of development of higher education is presented in figure 1.

It should be noted that each of the units of the represented structure in turn has a matrix of interacting components, forming a tensor of the system for development management; matrices of each block element by element interact with each other, in turn, forming the vector of control in accordance with the tasks and the current moment of time.



**Figure 1.** Structure of a control system of development of higher education

Regulatory framework for management of development of higher education are the Federal laws, programs and strategies for development: the Law on education of the Russian Federation, the Concept for long-term socio-economic development of the Russian Federation for the period until 2020 and the Federal targeted program of education development for 2016 - 2020, State program of the Russian Federation "Development of education" for 2013-2020, which provide legitimacy of the offered innovative ideas for management of education development.

The methodological basis for management of of higher education development consists of the following methodological approaches (information approach, system approach, process approach, operational approach) allowing determining of the patterns' aggregate for the management of higher education

development: management of development of higher education provides a purposeful organization of all types of interaction between system elements and entities of education; personality is an active entity of education, carrying out its own impact on the performance of the educational system; managerial effectiveness of the development of higher education largely depends on the awareness about the course of educational activities (processes) and state (development) of the entities of education; informational potential of the system of higher education contains all the information necessary for taking adequate managerial decisions. Based on the selected patterns the principles for management of development of higher education are defined: innovations principle (is aimed at management of sustainable development in higher education through continuous updating of components of the educational system); the principle of information transparency (ensure satisfying of higher education governing entities' information needs; the principle of anthropocentrism (consider the person (personality) as the Central active element of the educational activities); the participative principle (contributes to the harmonization of the agents' educational interests at all stages of management of development of higher education); the principle of controllability for higher education (determines the necessity of the continuous control actions and response of all elements of the system); principle of an iteration (includes the motion control of the system and its elements to achieve the target results by checking the accuracy of this approximation); the principle of adaptability (ensures the survival, development and efficiency of functioning of the higher education system in conditions of high turbulence of external systems and activity of entities of education).

The types of development of higher education determine the direction of productive changes, among them there are: social, organizational, resource, pedagogical and personal. For each of the types of development of higher education the entities of development's management; orientation of development's management; the integration of development's innovation; the type of reactions to changing of external/internal environment are defined.

As the objects of development's management of higher education in the study the information relationships and communication between agents of higher education (state-society-personality-staff of education-employers) are allocated, the result of which is new for management data. Controllability of the agent of higher education (impact and the resultant action) is fully dependent on the adequacy of the constructed model and understanding (level) of social responsibility for their actions. Taking into account the multiplicity of educational agents, the complexity of their interactions and high activity, multidimensionality of the model of the higher education system and the limited controllability of the system of higher education become evident. Promising one in this aspect seems a theoretical model of "new managerialism" (Belyakov, 2009,) in which priority is given to quality of result of education; universalization and standardization of management; the allocation of the education managers as a distinct social group, bearing responsibility for the result. Development and implementation of this model for the higher education system and its structures, in our opinion, will significantly reduce the moral risks of education, the risks of control of education, financial costs, the autonomization and collegiality of education.





Kinds of development's management of higher education include: institutional development's management of higher education (translation and execution control of state vision and orders on the whole hierarchical structure); the development's management of higher education structure (defines the hierarchy of subordination within the University/University's structure by the type of organizational structure, provides technology of management solutions' transmitting, obtaining of reporting on progress and implementation of educational activities); staff development's management is a part of the organization management of training and retraining of educational organization's staff that provide high-quality realization of educational processes; pedagogical management of development is a planning, organizing, monitoring and adjusting of the teaching activities of the University teacher, consisting in the development and implementation of the educational process; self- management of development is a socio-psychological characteristics of individual students, identifying the changes, necessary efforts (work) in the course of educational activities with the aim of achieving a qualitatively new learning outcomes (Moralov, 2008). A special place in the hierarchy of types of management of development of higher education belongs to two types: quality management of higher education as the main factor of its development and information management as a continuous, dynamic and changing part of any kind of management on the provision of optimally grouped data on the status of the higher education system or its elements for making management decisions, ensuring the achievement of the objectives with the resources available.

The managerial mechanisms of higher education's development ensures the self-determination of the system when there is impact on its resources, i.e. the planned reaction of the system (the organization of its processes and structures and methods) on the adjustable control within the selected boundaries, and cycle of development's control. To them in the context of this study we include: scenario modeling, which allows to consider influencing the system factors in various interpretations and to give new information for making management decisions for the development of the system; process modeling of educational activities that contributes to continuous improvement in the framework of quality management, as the educational activities and so the management of the development; information and logical modeling, allowing to obtain a complete informational description of educational activities for orientation, active action, management with the purpose of maintaining, improvement and development of higher education. In the formation of information flows and the construction of a system of hierarchical processes there is a decrease of the entropy of educational activities, transparency of management and optimization of information interaction between all agents of higher education that allows to carry out changes in the social conditions of functioning, queries, attitudes in the framework of the higher education system's functioning.

Monitoring of management of higher education's development provides for each level of management system of development and its components the identification of the states' discrepancies of the system's objects when the implementation of the management in order to avoid gaps between strategic direction and operating activities; an analysis of the positive or negative factors, determination of their causes is a way to "improve" processes of the higher education system or its structure for the next management cycle.



Practical implementation of the proposed management system of development of higher education allows: to carry out the "production" of knowledge, analysis and transformation in order to achieve a performance that satisfies all agents of higher education; to implement a planning, forecasting, and scenario modeling for the development of higher education; to provide planned regulation of the management, significantly reducing the uncertainty of the higher education system and potentially increasing its controllability.

### Discussion and Conclusion

There is justification in research-teaching practice of: understanding of the role and place of higher education in modern socio-cultural conditions (Nikandrov, 2008; Smirnov, 2002, etc.); methodology of management in pedagogical systems (Shamova, Davydenko & Shibarov, 2007; Tretyakov, 2001, etc.); management of education's quality and its quality-metric evaluation (Subetto, 2004; Tretyakov, 2009, etc.); managing of development of various levels of education (Shchepakina & Tarasova, 2012; Pudenko, 2010; Khudin, 2008, etc.).

Promising one in this aspect seems to be a theoretical model of "new managerialism" (Belyakov, 2009) in which the priority is given to the quality of result of education; universalization and standardization of management; the allocation of the education's managers as a separate social group, bearing responsibility for the result. Based on this model, we believe that the development of the higher education system (as a consequence of the irreversible positive changes of the system and its components under internal and external managerial influence) should be effective for all agents in higher education (stakeholders), that is, to provide: for the individual – the right to education, opportunities of personal and professional development, the potential competitiveness of graduates in the labor market; for society – socialization of the population, transferring and preservation of cultural values, formation of human capital; for employees of educational organizations - social employment and security; for business (employers) the satisfaction of the needs in specialists with defined professional and personal qualities (competencies); for state (in a global sense) technology development, competitiveness of economy, growth of gross income, etc. The rapid change in the social conditions of functioning, queries, attitudes, causes a change in the concept of organizational and managerial practices of education, modification and search of new concepts for management of development of higher education.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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