



FORMAL MODELING TECHNIQUES OF PUBLIC ADMINISTRATION IN THE SYSTEM OF TEACHER EDUCATION

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Summary

In the article investigates formal methods of modeling the process of public administration system of teacher education, the essence of teacher education as a system. Revealed the method of cognitive modeling, as such what allows comprehensive analysis not formalized and formalized methods. Determined that the cognitive modeling allows to investigate the evolution of the situation: self-development (development of the object, current trends), and managed development the object (taking into account the development of the control actions in the direction of the intended target). In the article shows the steps of using cognitive technology in public administration system of teacher education. Determined that the cognitive maps allow for analysis of the impact on the process of governance, i.e. the analysis of the situation investigated by studying the structure of mutual influences concepts of cognitive maps and dynamic analysis, which is to generate possible scenarios of its development.

Key words: modeling, public administration, the system of teacher education.

Аннотация

В статье исследуются формальные методы моделирования процесса государственного управления системой педагогического образования, определяется сущность педагогического образования как системы, раскрывается возможность применения метода когнитивного моделирования, который позволяет проводить многосторонний анализ систем как неформализованными, так и формализованными методами. В ходе исследования определяется, что когнитивное моделирование позволяет исследовать эволюцию ситуации: саморазвитие (развитие объекта при сохранении существующих тенденций) и управляемое развитие (развитие с учетом управляющих воздействий в направлении заданной цели) объекта. Исследуются этапы использования когнитивной технологии в процессе государственного управления системой педагогического образования. Доказывается, что когнитивные карты позволяют осуществлять анализ влияния на процесс государственного управления, то есть анализ исследуемой ситуации посредством изучения структуры взаимных влияний концептов когнитивной карты и динамический анализ, который заключается в генерации возможных сценариев ее развития.

Ключевые слова: моделирование, государственное управление, система педагогического образования.

Formulation of the problem.

The integrity of the public administration cannot be granted only with the help of the administrative and regulatory and political-ideological measures. To ensure the integrity of the public administration is necessary and methodological unity build manufacturing processes of state administrative decisions, projects, programs and policies. Drafting single model governance process goals in the exact form is impossible and therefore a target of the government represented by a certain number of known models of processes purposes. Each of these well-known model target process allows you to answer some complex questions of construction and implementation of the objectives of the process of public administration [1].

Relevance of the topic study has confirmed that there is no fundamental research in the subject in the science of public administration

Condition research. Various matters of public administration in the education system have studied works V. Andruschenko, V. Bakumenko, V. Kremen, T. Lukina, V. Lugovy, N. Protasova and others. Modeling

systems of various types and levels been studied in the works Yu. Kulyutkina, I. Novika, V. Shtofa and others.

The purpose of this article is the selection and adaptation of modeling tools using formal means to achieve efficiency in the public administration of the system of teacher education. The novelty is that this work is an attempt to explore the possibility of applying formal methods for modeling in the practice of public administration.

Basic material. Understanding the nature of the system of education of the teachers creates real prerequisites for good public administration. Methodology of system approach to management encourages a clear view of teacher education as a system, its main features.

The concept of "system" gives an idea of integrity, devoting its parts, or components, which is its first sign. However, in the public administration system of teacher education, it is important to see not only its main parts, but those connections and relationships that arise are added or destroyed between these parts. In other words, what is the structure of this system, which components act as the backbone, and the prospect is

that the development of these ties and relationships. Therefore, the presence and structure of the second feature of the system. The third feature of the system is its integrative [2].

Each system component has its own properties and characteristics, but in their interaction, they form a new, integrative system property, not reducible to the properties of the individual components. Resilience integrative properties determined integrity of the system [3]. In the public administration system of teacher education is important to remember, and the manifestation of the fourth property system – its close and specific association with the external environment. Interaction between the teacher education and the environment can occur in two forms. In the first case, the system of teacher education adapts to the environment by rearranging their processes and the second – environment subordinates to achieve their goals.

Consistency and integrity in the public administration system of teacher education also involve interaction and relationship management functions and social. This principle excludes the one-sidedness in the management when the



principal and decisive function recognizes any one of them. This principle emphasizes that management activity is consistent, logical, mutually beneficial, all its functions are equally important.

Thus, the governance system of teacher education is based on a systematic approach, which is the basis for the formation of a new type of thinking – a system that determines the content, forms and methods of training; knowledge assimilation be addressed in forming unity with their activities.

From the perspective of system analysis, public administration system of teacher education is a subsystem of the public policy in the field of teacher education.

Quality of public administration system of teacher education is evaluated with respect to vector criterion (hierarchical structure of quality criteria) software programs, the State policy in the field of teacher education. Only in accordance with the criteria imposed by the hierarchy and dedicated rational complex tasks continue to be built hierarchy governance system of teacher education with estimates of its elements. It should serve as the basis for long-term development of the entire system and its individual subsystems. Subsystem state policy in the field of teacher education should be to implement it and to respond to all the changes occurring in the performance of reform.

In the context of the reform of teacher education is to preserve the basic confidence in the quality of education. It is determined by the qualitative composition of teachers, information base, and regulatory logistics educational process, its laboratory facilities, traditional forms of communication between teacher and student, including teacher control over the activities of the trainees in the feedback that allows to reach an understanding of educational material with the possibility of adjusting the educational process [4].

New training technologies should include preserving the main component of traditional teaching, which caused its credibility. Many of the old teaching methods were ineffective (commonly known fact low quality knowledge in the conditions important for small towns distance learning is not completely clear role tests, written exams without dialogue with the teacher trainees to

improve the quality of education). While modernization of teacher education takes place when conflicting conditions: the delegation of functions to the regional state level, building on local self-government (shifting strategic functions and problems of the state for educational institutions); alignment of the range and power of a network of teacher education with the needs of the region in light of the state policy in the field of teacher education (closed formation of regional labor markets and educational services, increasing the gap between metropolitan and provincial education, loss of systematic public education); lack of responsiveness on the development of state-level regulatory framework; update the content of teacher education, learning technology, legal, scientific and methodological support of education (increase requirements for personnel, logistics, information support of the educational process with the need to increase funding); decline of the system of professional teaching staff and teachers in general; brain drain from the system of teacher education in other industries with higher wages and other benefits and privileges of life; occurrence of Ukrainian education in the global educational community; a competitive environment in the face of public and private educational institutions (introduction of paid educational services contributes to the transformation of teacher education from an elite to a mass).

Given the instability needs a clear state policy in the field of teacher education, not only reflects, but also advances the level of development of the society with the preparation of possible perception of new ideas. All this places high demands on the widespread use of intensive forms of development of pedagogical schools to improve the quality of education and educational services. There is the commercialization of universities in increasing demands for quality professionals in their professional rapid adaptation (transition from state planning and distribution of training specialists to contractual relations with prospective customers).

The initial stage of identification and methodological basis of the mechanism of public administration system of teacher education as a whole and its individual components is the construction of the

conceptual model. Questions to construct models of public administration system of teacher education in general considered in numerous publications and discussed in a number of international forums on issues of science, technology and education, including those conducted under the auspices of UNESCO.

The objective of this work was to select and adapt research tools with which could facilitate the analysis and be done with the help of more formal means justified its conclusions and recommendations to influence the governance system of teacher education. As such we offer machine tools currently developing cognitive modeling [5], which allows for a comprehensive analysis of systems as formalized and formalized methods. In using this apparatus implemented an interdisciplinary approach, the need for which has been repeatedly emphasized in the work of researchers.

Cognitive modeling allows investigating the evolution of the situation: self-development (development of the object if current trends), and managed development (taking into account the development of the control actions in the direction of the intended target) object.

We suggest the following steps in using cognitive technology in public administration system of teacher education (Table 1):

However, despite the existence of different approaches to governance of teacher education system using modeling and computer technologies, all of them, anyway, are focused on addressing the major challenges: the development of the hierarchical structure of the quality criteria and the corresponding hierarchical governance system of teacher education, formulation and solution of multi-criteria task governance system of teacher education in the commercialization of high school, as well as iterative procedures based on the existing experience in the design and operation of a number of complex systems), optimization of the subsystems, including learning management system; implementation of quality management system of education, based on meeting the educational services to customer requirements; compliance with national education standards, legislation at competitive prices with a profit for the development of the educational system itself.



Table 1

Stages of cognitive technologies and the results of its application [5]:

Stages	Form of representation the result
1. Cognitive (cognitive task) structuring of knowledge about the object and the external environment for him based on the PEST-analysis and SWAT-analysis: Baseline analysis of the object around with the release of the basic factors that characterize the economic, political and other processes occurring in the object and its macro-and influencing the development of the object. 1.1. Identifying the factors that characterize the strengths and weaknesses of the object 1.2. Identifying the factors that characterize the opportunities and threats from the external environment object 1.3. Construction of the problem field of the object	Report system conceptual study object and its subject area
2. Constructing cognitive development model object – formalization of knowledge obtained in step cognitive structuring 2.1. Isolation and study of factors 2.2. Establishment and study the relationships between 2.3. Construction of the graph model	Cognitive computer model of an object as a directed graph (matrix interactions and factors)
3. Scenario study trends in the development of the situation around the object under study 3.1. Defining the purpose of research 3.2. Task scenarios studies and simulation 3.3. Identify trends in the development of the object in its macro environment 3.4. Interpretation of the results of the scenario study	Report scenario study the situation with the interpretation and conclusions
4. Develop strategies for managing the situation around the object under study 4.1. Definition and justification of management objectives 4.2. Inverse problem solution	Report on the development of management strategies with justification strategies according to different criteria of quality control
5. Search and study strategies to achieve the goals of stable or changing situations For stable situations: a) selection and justification of management objectives; b) the choice of measures (controls) to achieve the goal; c) analysis of the fundamental possibility of achieving the goal of the current state of the situation using the selected events; d) analysis of the real constraints on the implementation of selected activities; d) analysis and justification of the real possibility of achieving the goal; e) development and comparison of strategies to achieve the goal: closeness of the results management to the target; costs (financial, physical, etc.); the nature of the consequences of (reversible, irreversible) from the implementation of these strategies in the real world; risk of emergencies To changing situations: a) the choice and justification of the current management objectives; b) with respect to the current target valid preceding paragraphs b-e; c) Analysis of changes in the situation, and displays them in a graph model of the situation. Move to the item a.	Report on the development of strategies to achieve the goal of stable or changing situations
6. Develop a program implementing the development strategy of the object based on a dynamic simulation (with the support of a software package) 6.1. Allocation of resources in the areas and time 6.2. Coordination 6.3. Control over execution Computer simulation model development facility	Program development strategy of the object.

In this context, one of the benefits of cognitive modeling process governance system of teacher education is the ability to conduct on its base scenario studies. Thus, under scenario we mean a set of control and external influences and initial

trends underlying factors, as established in the initial trends scenario will be characterized by a set of managers and external influences.

Conclusions. Thus, the proposed approach to the governance system of

teacher education broadened the range of use of the method of cognitive modeling in science governance. The main problems to be solved within the framework of cognitive modeling and forecasting are the task of choosing alternative strategies



governance system of teacher education. Cognitive maps allow for analysis of the impact on the process of governance, that is, analysis of the situation investigated by studying the structure of mutual influences concepts of cognitive maps and dynamic analysis, which is to generate possible scenarios of its development.

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ТРАНСФОРМАЦИЯ ПРАВОВОЙ СИСТЕМЫ УКРАИНЫ В УСЛОВИЯХ ГЛОБАЛИЗАЦИИ: ОБЩЕТЕОРЕТИЧЕСКИЕ АСПЕКТЫ

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Summary

The problem of the impact of globalization on the transformation, change and modernization of state and legal institutions, all legal system elements of society are analyzed in this article. The degree of the impact of globalization on lawmaking process, application of the law, subjects of law, legal culture, legal policy, system of sources of law of the country is determined. Problem of modernizing legal system provides a comprehensive structural transformation of the whole conglomerate of social relations, which are regulated by law, is formulated in this article.

Key words: transformation, globalization, legal system, modernization of legal system, legal policy, lawmaking, legal ideology.

Аннотация

В данной статье проанализирована проблема влияния глобализации на трансформацию, изменение и модернизацию государственно-правовых институтов, всех элементов правовой системы общества. Определена степень влияния глобализации на правотворчество, процесс применения права, субъектов права, правовую культуру, правовую политику, систему источников права страны. Сформулировано, что проблема модернизации правовой системы предусматривает комплексную структурную трансформацию всего конгломерата общественных отношений, которые регулируются правом.

Ключевые слова: трансформация, глобализация, правовая система, модернизация правовой системы, правовая политика, правотворчество, правовая идеология.

Постановка проблемы. В юридической научной литературе приобретает распространение положение, что «глобализация существенно влияет на трансформацию, изменение и модернизацию государственно-правовых институтов, норм и отношений на всемирном, макрорегиональном и внутреннегосударственном уровнях, стимулирует, ускоряет и обновляет процессы универсализации в сфере права». Процессы глобализации приобретают все более стремительное развитие, и, влияют на функционирование государств, на их базовые институты, функции и на суверенитет [1, с. 337–346; 2, с. 38].

Актуальность темы. Глобализация как феномен общемировой аксиологии и онтологии – это явление многоуровневое, многофункциональное и многоаспектное. Ее гносеологические очертания были даны в многочисленных работах гуманитарного направления. Трансформационный потенциал глобализации стал благодатной почвой для размышления в рамках и юридической науки.

Изложение основного материала. Ученые, которые исследуют проблемы

глобализации, выделяют, как правило, три основных направления ее влияния на правовые системы современности, а вместе с тем на теорию и методологию ее познания. *Первое направление* связано с влиянием глобализации на характер взаимоотношений национальных правовых систем, усиление их тесной взаимосвязи и взаимозависимости. Таким образом, уже недостаточно исследовать каждую систему отдельно, а необходимо рассматривать их в «общей системе» в силу их тесной связи и взаимодействия. *Второе направление* влияния глобализации на право и на его теорию ассоциируется, по мнению специалистов в области англосаксонского права, преимущественно с изменением главного направления развития данной правовой семьи, что все более фокусируется не на проблемах внутреннего, а на проблемах мирового (глобального) правопорядка. *Третье направление* связано с влиянием глобализации не столько на право как явление, сколько на его теорию и соответствующую методологию [3, с. 17,18].

Процесс модернизации правовой системы в современной Украине про-