



Features of Pedagogical Management In The Information Society Conditions

Tatyana A. Olkhovaya^{1*}, Elvira R. Saitbaeva², Tatyana N. Kriskovets³, Irina V. Chikova⁴, Vladimir M. Shinkaruk⁵, Larisa N. Gorbunova⁶, Kirill S. Ezhov⁷, Olga

V. Popova^{8,9}

1 Department of the General and Professional Pedagogics, Orenburg State University, Orenburg, Russia.

2 Department of Education Management, Orenburg State Pedagogical University, Orenburg, Russia.

3 Department of Pedagogics of High School, Orenburg State Pedagogical University, Orenburg, Russia.

4 Scientific Research Laboratory, Orsk Humanitarian-Technological Institute, Orsk, Russia.

5 Department of Criminal Procedure and Criministics, Volgograd State University, Volgograd, Russia.

6 Vice Rector for Research and Information Technology, Moscow Region "Academy of Public Administration", Moscow, Russia.

7 Department of Physical Education and Sports, Ural State University of Economics, Yekaterinburg, Russia.

8 Department of Legal Regulation of Economic Activity, Financial University under the Government of the Russian Federation, Moscow, Russia.

9 Department of History and Theory of State and Law, Russian State University of Humanities, Moscow, Russia.

*corresponding author

ARTICLE INFORMATION

Original Research Paper

Received May. 2018

Accepted July. 2018

Keywords:

Pedagogical

Management

Conditions

Information

ABSTRACT

The relevance of the topic is determined by the socio-cultural trend of transition to the information society, when the philosophical foundations of human activity and production have been changed significantly. The purpose of the article is to determine the features of pedagogical management in the conditions of information transformations that significantly changed the content and culture of education management. The authors identify the main characteristics of pedagogical management in the information society: cognitive nature, reflexivity, flexibility, risk analysis, self-management. The methodology of pedagogical management in the information society (information-cognitive approach and principles: stakeholder, uniqueness, periphery, subject-semantic orientation), which sets its coordinates in the educational process is determined. The cycle of pedagogical management in the information society based on the knowledge paradigm is revealed and the directions of structural changes in the educational process for the implementation of pedagogical management in the modern information society are developed.

Keywords: education, information society, pedagogical management, management cycle, management functions, organizational structure.

1. Introduction

The emerging information society is characterized by changes in all spheres of public life, based on the methods of obtaining and processing information. Automation of these processes, the use of information and telecommunication technologies by almost all layers of the active population has changed the essential structure

of many phenomena, processes, relationships in all spheres of life and production, as well as the Outlook of people (Adizes, 2011; Agazzi, 2012; Orlov, 2012). Positioning information as the most important strategic resource in the economy, education and culture, has determined the need to develop new mechanisms for obtaining knowledge from large information flows, taking into account the high mobility of all subjects and equal access to information.

Education as a sphere of activity has now moved from a stable position of functioning to a dynamic position of development in all directions, which leads to the transition to a new content and a new culture of management, based on the mobility of forms and methods of training. In order to be relevant to the nature of the information socio-cultural reality in General and to the development of education as a separate sphere, its management requires its own transformations and new opportunities built on dynamic multiple transformations (Bashmakova, 2007; Ignatyeva, 2006; Ivanova & Osmolovskaya, 2011; Levina, 2016; Nikolaeva & Shchelkunov, 2009; Tastan & Davoudi, 2015; Fartash et al., 2018; Davoudi et al., 2018).

The objects of this world are considered as open non-equilibrium systems that are in constant interchange with the environment and have the property of self-organization and self-development. The development of information and communication technologies contributed to the growth of information, the formation of a single information space, the change in the processes of knowledge dissemination – phenomena that led to the recognition by the world community of human potential as the main socio-economic resource. The change in the importance of knowledge actualized such requirements to a specialist as professional and personal competence, innovative culture, and the ability to self-management by personal knowledge.

Pedagogical management, in the context of modern socio-cultural reality, as the process of transfer of pedagogical situation, processes from one state to another, corresponding to the goal, cannot stay away from these changes. In General, management is based on a logical system of actions aimed at an organized object. Management is single-line, arises from the center, is based on the relationship of "domination-subordination", being a single-purpose, it does not allow changes in the target settings from the beginning to the final result. Based on administration and centering, any type of management in a particular organization functionally provides a rational organization of work, optimization of work operations, conflict resolution (Shamova, 2001; Novikov, 2009; Radayev, 2010; Snezhitsky, Kurbat & Gushchina, 2012; Tastan et al., 2018).

In the conditions of mobility and instability of the educational system, high activity of management objects, and continuous variation of States manageable "object" and "subject" pedagogical management takes the character of "management by organized sets" with high decentralization. The "data-information-knowledge" chain of pedagogical management practically "destroys" classical hierarchy and vertical of management, generating a new type of management and requires definition of its principles and mechanisms.

Research Methodology

New formation for the information society is being implemented through the established structures - educational organizations, however, it is carried out through intensively formed and ever-changing connections. This involves the rejection of a rigid goal and determines the possibility of adjusting management concepts and objectives, acquires flexibility and situational nature. If earlier education management was carried out to support and reproduce the existing stable conditions of society, today it is directed to the reproduction of the development process. It acquires the character of managing the development of education through the design of its possible changes, alternatives, options and probabilities of future States. It is directed to the changes that occur in the subjects of education and the surrounding society.

Accordingly, the control theory in these conditions should not have ready control schemes, but variable algorithms.

Methodological bases of pedagogical management in the information society are determined by the implementation of information-cognitive approach as a method of knowledge extraction from the information flows of the system. The essence of the approach is to reduce the entropy of the system through the implementation of continuous monitoring of students' development and analysis of the causes that have led to development opportunities or risks in the course of educational activities. The key concepts of information and cognitive approach to pedagogical management are: information about the state of the higher education system, grouped into directed information flows; knowledge about the functionality and laws of the higher education system (communication, relations, and directions of action) and communications (methods of interaction between the subjects of the educational system management). The functions of the information approach from the technological level of its cognitive representation come to the philosophical level, functioning for in advance conditioned information uncertainty, with the aim of reduction and formalization, providing efficient handling and optimization (improving the quality) of educational processes. Continuous cyclic nature of information transformation into knowledge, with which one can "get" new information, allows not only to structure the flow of pedagogical information, but also to carry out their interpretation, obtaining new knowledge to manage the development of the educational system in a highly dynamic environment. The formation of a new system of knowledge about the specifics of educational activities within the selected educational organization will determine the boundaries of the process variability, the quality indicators' defining, will identify the advantages and disadvantages in the implementation of pedagogical management in each individual case under the analysis.

This approach in pedagogical management is implemented through a set of the following principles:

1) Stakeholder principle as a way to resolve potential contradictions within the educational system. The basis of this system are the teachers, students, educational organization, educational environment, setting the system of pedagogical, psychological and social practices, as well as a set of built-in learning and management mechanisms. The established basic conditions of educational activity determine the nature of the relationship within and between the selected agents of education, forced to interact in a certain format. Many relationships arise in many ways determine the effectiveness and quality of learning, despite sometimes the mutually exclusive nature of stakeholders' goals and determine the complexity of the development of universal management, focused on maximizing the welfare of all its participants.

2) The principle of uniqueness is to understand the abilities, goals and motives of each student as unique, not universal. In this regard, the idea of cooperation in the framework of educational activities is implemented – the need of pedagogical diagnosis, the desire to understand and accept the interests, beliefs and representations of the student as a reality that does not require evaluation. In this case, the goal to train each student who is ready simultaneously to take risks regarding his/her ideas about him/herself; about his/her professional future will be realized. The balance to compliance with the boundaries of the educational process and the requirements for its effectiveness, fixed in educational standards is important here for the teacher.

3) The principle of periphery, excluding the centralization of pedagogical management. The periphery here is understood as the involvement of all students as agents of education to participate in the pedagogical management (complicity), as pedagogical communication is extremely important in educational activities, so it is the students' personal manifestations become the basis for the quality of education. At the same time, an important factor is the responsibility for effectiveness, which is shared by all participants of the educational

process. The horizontal hierarchy determines equality in rights, duties, responsibility for its effectiveness. It has the advantage that is the possibility of flexible and fast response to any changes in the terms of its activities implementation.

4) subject-semantic orientation of the educational process formed on the basis of a two – level construction of the discipline’s content -the invariant part, which is designed by the teacher (basic) and variable (eclectic variable), which is designed by students with the involvement of the materials of a single information space (in accordance with their interests, needs, motivation, personal experience). Here students’ need to learn through immersion, freedom of choice and responsibility for the decision appears; skills of self-knowledge are activated; the range and intensity of interactions within the field of knowledge is expanded; mobility in the selection and change of didactic systems is provided, and the environment itself is developed by enriching its knowledge by the subjects of the educational process.

The main characteristics of pedagogical management’s new theory in the information society are:

Cognition as a system of knowledge formalization aimed at increasing the share of formalized knowledge and the preservation of knowledge volume inseparable from the separate of the learning process. This involves a concentration of efforts to attract knowledge about the structure of pedagogical activity, psychological and pedagogical laws of learning from external and internal sources, the organization of formal knowledge exchange, the formation of intellectual capital associated not only with the subject knowledge of the subjects taught. Activity in the field of formation and use of intellectual capital today is Central in the competitiveness chain of the educational organization;

- Reflexivity, as a property of combining of knowledge processes with the control and management of intellectual processes of the entire education system. It is based on the consistent use of reflexive mechanisms of thinking in all elements and structures of the educational process, configured to transform a variety of situations, up to the change of target attitudes;

- Flexibility as an opportunity to make effective decisions related to the development of students or the educational environment, in terms of changes in external and internal factors that determine this development. It manifests itself in the expansion of the intended maneuvering’s boundaries (resources, technologies, etc.); the introduction of new teaching methods or technologies (within the boundaries of the pedagogical process); acceleration of pedagogical influences; improving the quality of results with fixed control effects;

the analysis of risks of pedagogical management is connected first of all by violation of educational process and its deviation from the goals necessary for achievement of educational results, here the probability of occurrence the risks of the trained, risks of the teacher, risks of their interactions within the educational subject is possible. It becomes important to diagnose psychological opportunities, personal social experience, and level of knowledge and breadth of interests of students in the subject area, possession of their own psychological reactions, preliminary scenario modeling of classes for predicting the situation of risk.

Self-government as the implementation of professional and personal needs of the teacher and its development, corresponding to the internal goals of self-development of the education system and its previous States. The basis of self-development is the motivation and needs of the teacher, the presence of professional activity principles, according to which a certain set of possible options is implemented while maintaining the basic structure of educational activities.

Thus, pedagogical management in the information society cannot pedagogical instructions by nature, it is

directed to the innovative movements generated in the educational process and implemented by its efforts of all its participants. Innovation, changing the tradition as a mechanism for the development of education eliminated the hard logic, the static of its condition as an integrated system, has created the need to abandon this style of management, which required the administration and the directives, the algorithms in achieving the goal, not changing from the beginning of its formulation to implementation. Management of a new, managerial type is an open system of actions involving the direction of modern management culture and aimed at the reproduction of development as an object. This system of actions allows for the possibility of different options and alternatives in decision-making, coordination of goals, risks in their implementation.

Results

The activity, which daily is carried out by teacher is administrative by nature. Considering the educational process as a system, one can say that its efficiency, development trajectory, resource consumption depend on the correctness of the management decisions that it makes. For the teacher, management is a systematic, predictable and technologically secured process of influence on the controlled system in order to maximize its effective functioning by creating conditions for the transition to a qualitatively new state, contributing to the achievement of goals.

Considering the research on pedagogical management (M.A. Moiseev, M.M. Potashnik, etc.), the authors of the article highlight the following features of pedagogical management:

1) pedagogical management is the activity of the subjects providing implementation of educational activity within the educational organization, the purpose of this activity is formation of competences' system (professional, General professional and General cultural) students implying their education, education (as formation of culture) and development;

2) pedagogical management is a multi-factor formation aimed at: self-government, management of students' state, management of the educational process's organization, management of educational resources' use, management of coordination of training's content;

3) Educational management must have the properties of predictability, regularity and cyclical nature of action, diagnostic nature of goals and factors for implementation;

4) Pedagogical management should be person-centered and be subject-entity, based on the state, abilities, needs of the student in compliance with the standards of training, fixed in the standards;

5) Pedagogical management should correspond to the complexity of management's object (educational activities), have organized feedback, have availability of possible scenarios' variety for its development and management decisions.

6) Pedagogical management should be implemented through management functions, organizational structure and organizational mechanism.

Functions are a separate part of management, a product of division and specialization in management:

the function of analytical monitoring, defined by the authors as the source and destination (0-point) of pedagogical management's cycle determines the status of the student (its approximation/ deviation with respect to the set learning goals), phenomena (occurring problematic situations), or process, highlighting problems encountered and deviations from the accepted norms. Regarding the results, depending on the object of pedagogical monitoring there are: situational, problem-based, causal and effect analysis of States, cognitive

analysis of emerging or projected problem pedagogical situations, the selection of the most likely alternatives based on the construction of information models of processes or phenomena. The informational paradigm gives rise to rapidly changing conditions and determines the need for prompt and adequate reaction of management to changes based on knowledge, laws and relations of educational reality;

the planning function of educational activities, which provides for the development of a training plan within each management cycle, is based on the requirements of the educational standard, approved curricula and work programs of disciplines, pedagogical laws of educational activities;

- prediction function determines the effective set of the educational activities' characteristics taking into account the quality management indicators of specific educational organizations and received ones in the course of the monitoring assessments (level of competence) of students;

the function of designing educational activities - of its forms, content, technologies, based on the mobilization of all resources in order to achieve the goals within the variability of processes;

the function of the organization assumes as a set of actions to prepare for the implementation of the approved project of educational activities within a specific discipline, the solution of organizational and technological issues of pedagogical interactions aimed at achieving the goal-the effectiveness of education;

The coordination function involves ensuring the coherence of actions (interactions) of the teacher, students and the educational environment, is implemented through management decisions and implementation;

the function of positioning is caused by changes in the state of students relative to the initial state, is determined by the development of competencies and changes with each advance in the framework of educational activities;

the control function involves the analysis and evaluation (self-assessment) of educational activities' necessary performance, its resources and interactions of all participants, based on the results of the current and final control of students' achievements, analysis of educational resources' state, characteristics of the educational organization's teaching staff.

The correction function involves the precise definition of the planned changes to bring the current state of educational activities to the planned ones and the possibility of achieving the goals.

As it is known, the control process takes place in time and consists of certain segments, so to describe the control model it is necessary to allocate an appropriate time period, i.e. the control cycle. The control cycle is a structural unit of the control process, which has all its quality characteristics (figure 1).

The cycle of pedagogical management is initiated depending on the time or factor type of management. As a "time" can be selected – the period of one lesson, the period from one control point to another, the period of development of one topic of the discipline, the period of development of the discipline, the period of training (semester); as a "factor" can act as the effectiveness of the process – the level of competence of students, and any of the factors of development of the student, affecting the effectiveness of educational activities, such as creativity, self-government, the formation of certain characteristics of future professional activities and so on .

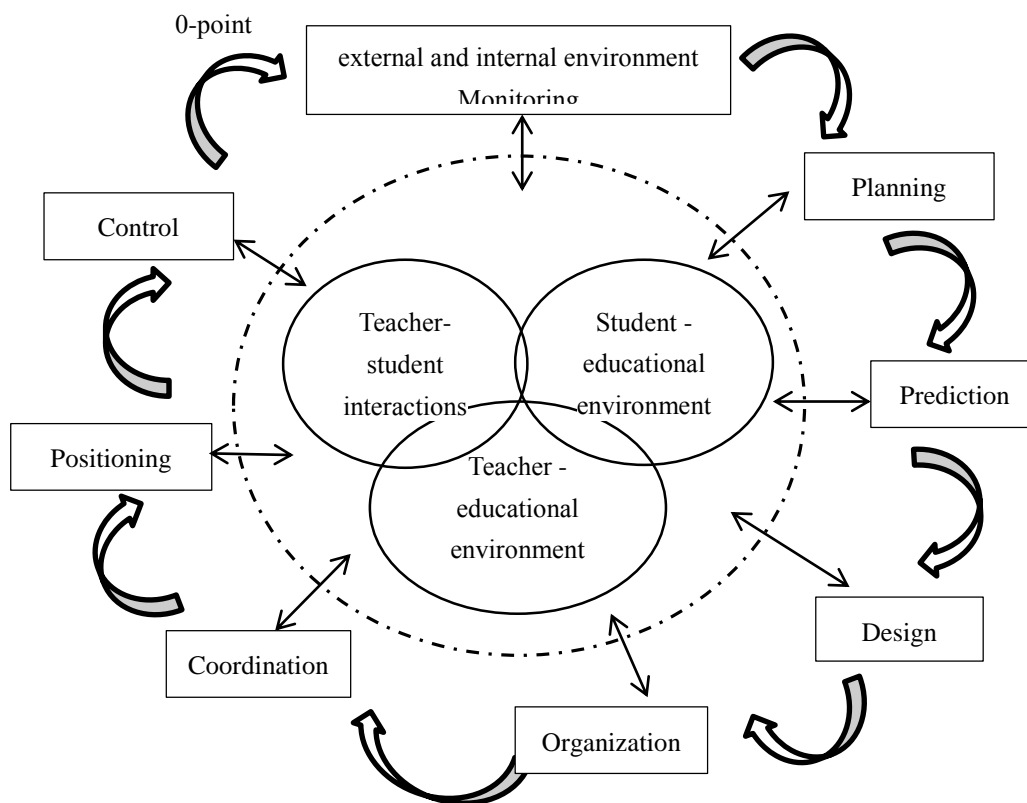


Figure 1. Cycle of pedagogical management in the information society (General cycle of management).

In addition, the organization of educational process management involves the development of all types of interaction between the student and the teacher. The focus on cognition as the formation of a system of knowledge from large information arrays based on the need and for the implementation of professional tasks determines the structural type of interaction between the teacher, the student and the educational environment. Preferred one is the matrix-collegial organization of the process, when the communication mechanism is a voluntary motivated coordination of learning paths, which provides a flow of informal information and allows one to make appropriate decisions, it is focused on the development of self-learning and stakeholder approach, implying a reasonable responsibility of each participant of educational activities for its implementation. Clear differentiation of teaching, management and support of educational activities is a distinctive feature of the matrix organization, causing adaptive management in the context of organizational changes.

Discussion and Conclusion

Improvement of the educational process as an open self-organizing system is an adequate response to the challenges of the modern information society (globalization, Informatization, intellectualization, uncertainty and dynamism) and changes in the processes of acquisition and transfer of knowledge (Ignatyeva, 2012; Ilyinsky, 2013; Kravets, 2011; Robert, 2010; Yakovleva & Yakovleva, 2011).

The effectiveness of educational activities from the standpoint of pedagogical management is provided: 1) the organization of consistent interaction of students (groups of students), the teacher, the educational environment; 2) the active state, pedagogical and scientific consistency of the educational environment; 3) the motivation and stimulation of educational activities of students, the level of their responsibility for the

effectiveness of training (Kamneva, 2010; Nesterova, 2014; Shtanko, 2011).

In modern conditions, educational activity is iterative in nature, when: 1) the value of all subsequent changes depends on the magnitude of the changes in the previous stages; 2) the movement to the changes is carried out in stages, with an increment of the main characteristics within the cycles; 3) the control of the state of all characteristics is carried out at each completed stage and its frequency is determined in the design of organizational aspects of educational activities; 4) based on the results of monitoring the state of educational activities, a management decision is made on all components that determine the preservation of the development path within the next cycle, or, if necessary, a decision on its adjustment.

Thus, pedagogical management as a complex and multifaceted pedagogical phenomenon has a direct impact on the educational process, its organization, deployment, result. The complex system of pedagogical management, based on information and cognitive approach, provides non-linear organization of educational activities, increasing the freedom and responsibility of the student as an agent of educational activities, contributes to the achievement of both personal and pedagogical goals of professional and personal development and self-development of students in the information society. The prospect of further work is related to the concretization of the combination of pedagogical management's components; clarification of the nature, forms, methods of management.

References

- Adizes, I. (2011). Management of changes. St. Petersburg: Peter.
- Agazzi, A. (2012). The idea of the society founded on knowledge. *Philosophy questions*, 10, 3-19.
- Bashmakova, N.I. (2007). Global trends in development of the higher education in the 21st century: vision of UNESCO and practice of reforms. *The higher education today*, 1, 28–30.
- Davoudi SMM, Fartash K, Venera G. Zakirova, Asiya M. Belyalova, Rashad A. Kurbanov, Anna V. Boiarchuk, Zhanna M. Sizova (2018). Testing the Mediating Role of Open Innovation on the Relationship between Intellectual Property Rights and Organizational Performance: A Case of Science and Technology Park, *EURASIA Journal of Mathematics Science and Technology Education*, 14(4), 1359-1369.
- Fartash K., Davoudi, S.M.M., Tatiana A. Baklashova, Natalia V. Svechnikova 4, Yulia V. Nikolaeva, Svetlana A. Grimalskaya (2018). The Impact of Technology Acquisition & Exploitation on Organizational Innovation and Organizational Performance in Knowledge-Intensive Organizations, *EURASIA Journal of Mathematics Science and Technology Education*, 14(4), 1497-1507.
- Ignatyeva, E.Yu. (2006). About management of knowledge and implicit knowledge in education. *The higher education in Russia*, 12, 36–41.
- Ignatyeva, E.Yu. (2012). Pedagogical management of educational activity of students in modern higher education institution. St. Petersburg: LEMA publishing house.
- Ilyinsky, I. M. (2013). Educational technologies: ratio of traditions and innovation. *Knowledge. Understanding. Ability*, 3, 3–7.
- Ivanova E.O., Osmolovskaya I.M. (2011). The theory of training in information society. Moscow: Prosveshcheniye.
- Kamneva, I.Yu. (2010). Formation of the theory of management in educational systems. Sustainable innovative development: design and management, 3 (volume 8), 11-23.
- Kravets, O.Ya. (2011). Management in educational systems: problems and decisions. *Psychology. Sociology. Pedagogics*, 7, 19–26.
- Levina, E. Yu. (2016). Concepts of information approach to management of development of education. *Secondary professional education*, 12, 9-13.
- Nesterova, M.O. (2014). Cognitive technologies of innovations in management of socioeconomic systems. Scientific notes of the Taurian national university of V.I. Vernadsky. *Philosophy. Cultural science. Political science. Sociology*, 1-2 (volume 27), 208–216

- Nikolaeva, E.M. Shchelkunov, M. D. (2009). Education in consumer society. *Education philosophy*, 1, 13-22.
- Novikov, D.A. (2009). Introduction to the theory of management of educational systems. Moscow: Egves.
- Orlov, S.V. (2012). Philosophical materialism during an era of information society (the concept of matter and virtual reality). *Philosophy and society*, 1, 42 – 54.
- Radayev, V. V. (2010). Five principles of creation of the new university. *Pro et Contra*, 3, 6 - 18.
- Robert, I.V. (2010). Modern information technologies in education. Moscow: Institute of informatization of formation of RAE.
- Shamova, T.I. (2001). Management of educational systems. Moscow: VLADOS.
- Shtanko, V.I. (2011). Anthropological calls of information civilization. *Bulletin of Kharkiv National University*, 9, 6–15.
- Snezhitsky, VA., Kurbat, M.N., Gushchina L.N. (2012). Education in information society. *Innovative educational technologies*, 4, 8-12.
- Tastan, S.B., & Davoudi, S.M.M. (2015). An Examination of the Relationship between Leader-Member Exchange and Innovative Work Behavior with the Moderating Role of Trust in Leader: A Study in the Turkish Context. *Procedia social and behavioral sciences*, Elsevier, 181, 23-32.
- Taştan, S.B., Davoudi, S.M.M., Masalimova, A.R., Bersanov, A.S., Kurbanov, R.A., Boiarchuk, A.V., Pavlushin, A.A.(2018). The Impacts of Teacher’s Efficacy and Motivation on Student’s Academic Achievement in Science Education among Secondary and High School Students, *EURASIA Journal of Mathematics Science and Technology Education*, 14(6), 2353-2366.
- Yakovleva N.M., Yakovleva N.O. (2011). Pedagogical management: essence, value and contents Modern higher school: innovative aspect, 4, 34-44.