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The features of the program realization of the electronic dean's office for the applied tasks of the system analysis based on the cognitive modeling technology

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The high rates of scientific-technical progress and the globalization of information environment of the consumption of information cause the obsolescence of linear, linear-branched and branched multilevel model, actualizes the need of introduction and use of the individual-oriented, individualized and adaptive model in the basis of the controlled technological process of the formation of knowledge of the trainees.

The information-educational environment of a modern educational establishment represents an integral set of the different components and kinds of support: information, organizational, scientific-technical, technological, hardware, software, methodical, personnel, legal, economic and other.

The informatization of the information-educational environments of the establishments of preschool, primary school, average (secondary) (general) and special, higher professional education, and also directly the educational establishments of professional retraining and improvement of qualification causes the purposeful creation, distribution and use of the means of automation of a new generation: the electronic rectory and dean's office, the electronic textbooks, the diagnostic modules for the analysis, monitoring and research of the level of residual knowledge and the individual features of trainees.

The cognitive modeling technology is intended for the system analysis of the difficult objects, processes and phenomena in the given environment of their functioning: open or closed, deterministic or stochastic and static or dynamic.

The apparatus of the cognitive modeling technology for the system analysis of the information-educational environments is proposed, which includes the technique of its use, the algorithm of formation of the structure of the cognitive model based on the innovative ways of presentation of the cognitive model (the oriented graph, combining the theory of sets, the multilevel structural scheme and the calculus with using of the corteges on domains), the techniques of research of the parameters of the cognitive model of the subject of training and the means of training, the algorithm of analysis of a posteriori data of testing of the level of residual knowledge and the research of the individual features of trainees (the subjects of training).

The developed automated training system acts as the closed contour with two levels of information interaction and six channels of information exchange between the different components: the electronic textbook based on the adaptive representation of information fragments processor, the basic and applied diagnostic module, the laboratory workshop, and also the rectory, the dean's office, the personnel department, the accounting office and library.

The dean's office acts as the element of organizational structure of an educational establishment, the activity of which is regulated by the rectory and coordinates the work of various chairs.

The chairs provide the development of scientific plans and plans of scientific-technical activity, and also the learning-methodical complex on a set of various subjects of studying (disciplines).

The electronic dean's office acts as an information repository, which allows to save, extract and view: the basic data – the parameters of academic-performance in the basic and current disciplines of chairs, the accounts of final users; the additional data – the theoretical and actual set of parameters of the cognitive model of the subject of training and the means of training; the extended data – the main and additional parameters of the subject of studying, the methods of testing of the level of residual knowledge of the trainees, the methods of research of the individual features of personality of the examinees.

The electronic dean's office realizes the potential possibility of monitoring of the academic-performance and the individual features of the contingent of trainees for the system analysis of the information-educational environment with the purpose of the increasing in the efficiency of functioning of the distributed automated training system based on the parametrical cognitive models block, which causes the creation of several additional elements of the organizational structure with the various means of automation of the activity of personnel: the laboratory of development of the innovative politics, the laboratory of improvement of the technological cycle of testing, the laboratory of development of the tests of the level of residual knowledge of the contingent of trainees, the laboratory of the methods of research of the individual features of trainees, the classes of testing of the level of residual knowledge of the contingent of trainees, the classes of diagnostics of the individual features of examinees, the laboratory of processing of the data of testing of the level of residual knowledge of the trainees, the laboratory of mathematical processing of a posteriori data by means of the statistical methods.

The data bank of the dean's office of an educational establishment represents the integral set of distributed databases of the various purposes: the database for the storing accounts of the users (it is formed by the trainees, teachers or administrator), the database for the storing of parameters of the subjects of studying (it is formed by the teachers and administrator), the database for the storing of parameters of the methods of testing of the level of residual knowledge of the trainees (it is formed by the teachers and methodists), the database for the storing of parameters of the methods of research of the individual features of trainees (it is formed by the teachers, methodists, physiologists, psychologists, linguists and other specialists), the database for the storing of the results of testing of the level of residual knowledge of the trainees (it is formed by the trainees, teachers and administrator), the database for the storing of a posteriori data of research of the individual features of examinees (it is formed by the trainees, teachers and administrator), the backup and archive database (it is formed by the administrator and teacher).

The results of scientific-research work and dissertation are presented in the first report on SRW for 2003-2005 y. “The research of the environment of automated training with the properties of adaptation based on the cognitive models”, in the second report on SRW for 2006-2008 y. “The research of the information environment of automated training with the properties of adaptation based on the cognitive models and the financial analysis of the organization by means of the cognitive modeling technology”, in the monography “The environment of automated training with the properties of adaptation based on the cognitive models” (dep. in “RAS”, 2007 y.).