

MODEL OF THE MULTY SYSTEM

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ABSTRACT

In the article describes the methods of implementing TIAV-media systems in the field of media education, studied the organizational and functional structure of the multimedia system, described the steps of forming an information base and a conceptual model of media education system, the algorithm of media contents online system - Designer Media course Builder, developed a method for constructing media contents online system - designer Media course Builder, describes methods for implementing TIAV-multimedia systems, testing and economic efficiency calculation software package in the multimedia field

KEYWORDS: Conceptual Model, Multimedia System, Designer TIAV-Multimedia Systems, Constructor TIAV-Multimedia Systems

INTRODUCTION

Multimedia systems are a necessary part of the process of using information resources of society, and the pace of their development is determined to a large extent the rate of accumulation of professional knowledge.

Acceleration of the dynamics of processes in all spheres of human activity, the complexity of industrial production, social, economic and political life naturally led, on the one hand, a rapid increase in demand for information knowledge, and on the other - to the creation of new tools and technologies to meet these needs. Intensive development of scientific and technological progress and the emergence of modern computer and telecommunication technologies and equipment, capable of storing, processing, and provide various types of discrete-continuous media, the emergence and development of multimedia systems and related methodological innovations radically changed the approach to the implementation of educational activities, to intensify the process of preparation professionals at all levels of the education system. Scope of multimedia information systems expands with each passing day. Today, they cover a wide range of applications including classrooms, conference rooms, comprehensive monitoring systems, situational centers and control centers, etc. Development of multimedia systems is characterized by the increasing complexity of their architecture. All processes in multimedia systems are discrete-continuous, as a result, there is a need to develop models of efficient algorithms, software package such automated multimedia systems, which would include online designers design and create multimedia courseware, training multi contents that based on the use of discrete-continuous object class TIAV.

TIAV- multimedia system - a class of objects consisting of textual, illustrative, video and audio information streams that form the basis for the development of multimedia content.

Synthesis algorithm software modules formed task-oriented management system TIAV- discrete-continuous processes multimedia system based on the concept of the formation of individual learning paths multi contents that takes into account the described features and apply the developed models and methods to solve the problem of class formation

multi contents for individual training is given in Figure 1.

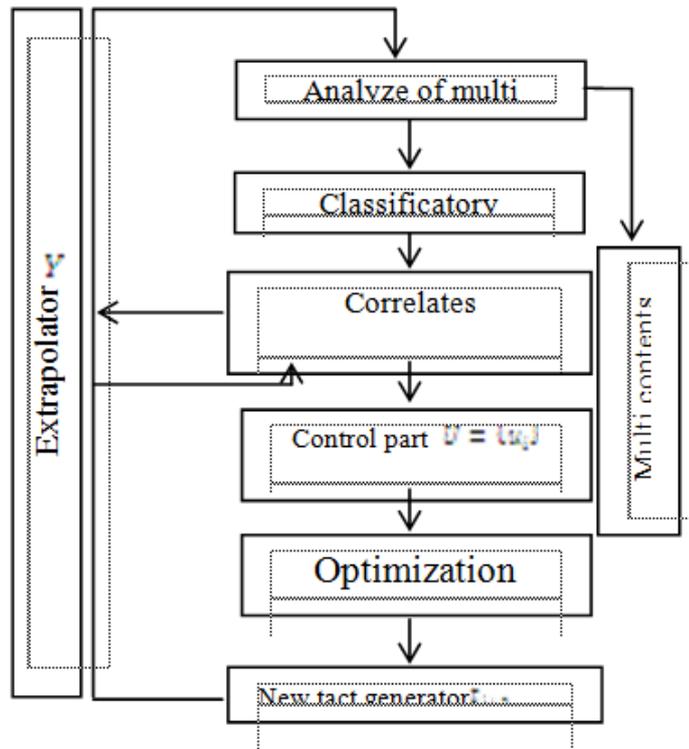


Figure 1: Algorithm Synthesis Software modules formed Task-Oriented Management System TIAV- Discrete-Continuous Processes Multimedia System

SUBSECTION

To implement the possibility of forming the initial set of alternative solutions in the system information is collected both normative and expert estimates. Then processing subsystem expert estimates calculated consistency of expert opinion and their level of competence, allowing in the case of inconsistencies weed out unreliable data. The result of the operation of the subsystem is also the coefficient matrix closeness of the connection between of multi contents.

Formation of the initial set of alternatives is performed using a model of interaction multi contents, then realized the choice of class multi contents to be studied.

Optimizing the solution obtained, subject to the limitations of time intervals learning multimedia system generates optimal individual learning paths, to meet the requirements of qualifying characteristics. Users of the system are trained, teachers, experts, administrator. Access rights and data changes made on the basis of functional responsibilities and levels of management of multimedia process. Conceptually, a system that allows to take into account the described features and apply models and methods developed to solve the problem of class formation multi contents for individual learning, there is a system to support decision-making by optimizing the solution obtained, subject to the limitations of time intervals learning multimedia system generates optimal individual learning paths, can satisfy qualification requirements specifications. Users of the system are trained, teachers, experts, administrator. Access rights and data changes made on the basis of functional responsibilities and levels of management of multimedia process.

Was considered the formation of the resulting algorithm multi contents class, based on the construction of the

approximating models in the form of adaptive neuro-fuzzy networks; describes the stages of development of the approximating model projections for the three method of identification of nonlinear dependence - with the help of the regression model, the fuzzy knowledge base of multimedia system and neuro-fuzzy model; A model formalization and typing the information needed for automated decision making in the management of multimedia processes, the possibility of taking into account different values of multimedia features.

According to the proposed model, an algorithm performed software implementation, describes the creation of multimedia software system, we calculate the cost-effectiveness of media education process.

To assess the level of quality assurance (K^*) discrete-continuous processes of processing of information resources in TIAV- multimedia systems can use the following heuristic expression:

$$K^* = (b_1 M_1^* + b_2 M_2^* + b_3 M_{a,v}^* + b_4 M_{an,im}^*) / \sum_{j=1}^4 b_j K^*$$

Where K^* - denotes a quantitative expression of the factor K ;

b_j coefficient significance j -th factor to ensure the quality of MP, determined by an expert.

Thus, to assess the level of quality assurance MP all included in the model factors must be submitted in a quantitative manner. Use one of the methods to quantify these factors with the following corresponding coefficients.

Dependence of K^* on the presence TIAV-objects is as follows:

$$K^* = b_1 M_1^* + b_2 M_2^* + b_3 M_{a,v}^* + b_4 M_{an,im}^*$$

Establishing minimum allowable values of the above factors and their comparison with actual values suggests a relevant factor below acceptable standards, as the factors that determine the bottlenecks in ensuring the quality of MP and requiring immediate action to address the situation. At the same time, these factors are considered as determinants of the top priorities of improving the quality of the MP in this situation. Determined that in comparison with the traditional method developed reduces the complexity and cost control procedures 2-3 times. Relationship labor and cost of manual operation to the complexity and cost of semi-automatic and automatic modes show a decrease in the values of the coefficients taken almost a factor of 2-3. Approximation of the experimental values - to analytical checked criterion - at Pearson warranty probability 0.9, which confirms that the experimental results to theoretical.

The method of calculation of economic efficiency and implementation of methods, algorithms and software-tools of the conditions that TIAV- multimedia system economically developed society should be formed based on the adaptation of education to the sustainable development model of civilization, implies the problem of priority development of the educational system, which must satisfy needs of the future information society.

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