

**OBJECT-ORIENTED APPROACH ON DEVELOPMENT OF MODEL OF
DISTANCE LEARNING.**

Buribaev B.B, Balgabekov A.B, Ateybekova Z.B.

In this article the algorithm of application of the general object model for the analysis of requirements and construction of a concrete system of distance learning. Formalized algorithm for applying the common object model.

Keywords: Distance learning, organizational and pedagogical requirements, object-oriented approach.

Distance learning technologies can be seen as a natural step in the evolution of the traditional system of education from the board with chalk to the whiteboard and computer-based training systems, from library books to electronic, from the conventional to a virtual audience. Distance learning of students will be effective, in condition of appropriate organizational and pedagogical requirements would be provided, exactly:

- theoretical justification and compliance with the didactic principles of distance learning;
- orientation of the learning process of students in the formation of their life competencies;
- providing opportunities to improve communication skills of students;
- establishment and practical application of pedagogical models of interaction between participants of educational process through the integration of traditional and distance learning;

Being based on the use of objects as an abstraction of the real world, the purpose of the object-oriented approach is a model of static and dynamic properties of the medium in which the requirements are defined. This environment is called a domain problem. Object-oriented approach formalizes understanding of the world and the phenomena occurring in it. It is also connects the problem area with solutions area, by maintaining the structure and behavior of the analyzed system. In this approach, the functions are provided by the types of cooperation between the entities that make up the system. Linking is becoming dynamic and functional development is no longer affects the static structure of the software.

Construction of model requires five basic concepts (objects, messages, classes, inheritance, and polymorphism) - for analysis, design and implementation of software applications in a uniform way.

When the problem is completely clear, software system is realized through creation of software representations of simple elements, which were determined using a mechanism of

decomposition (object or function). Creating a system in that way, can be seen as a process of integration - the basic components of a coherent organization that aims to support the complexity of the control method using decomposition.

In unified system opportunity to separate the components connected by method of their initial integration. Integration is a fundamental property of object orientation; It ensures consistency between the components of a software system within a unified model, which applies to all phases of the software life cycle. The power of object-oriented approach is based on its dual ability to decomposition (separation) and recomposition (re-unification) due to the richness of its integration mechanisms that apply to both static and dynamic aspects of a software.

The development process consists of several stages. And these stages exist in all models of life cycle of projects, they have just different names and group actions.

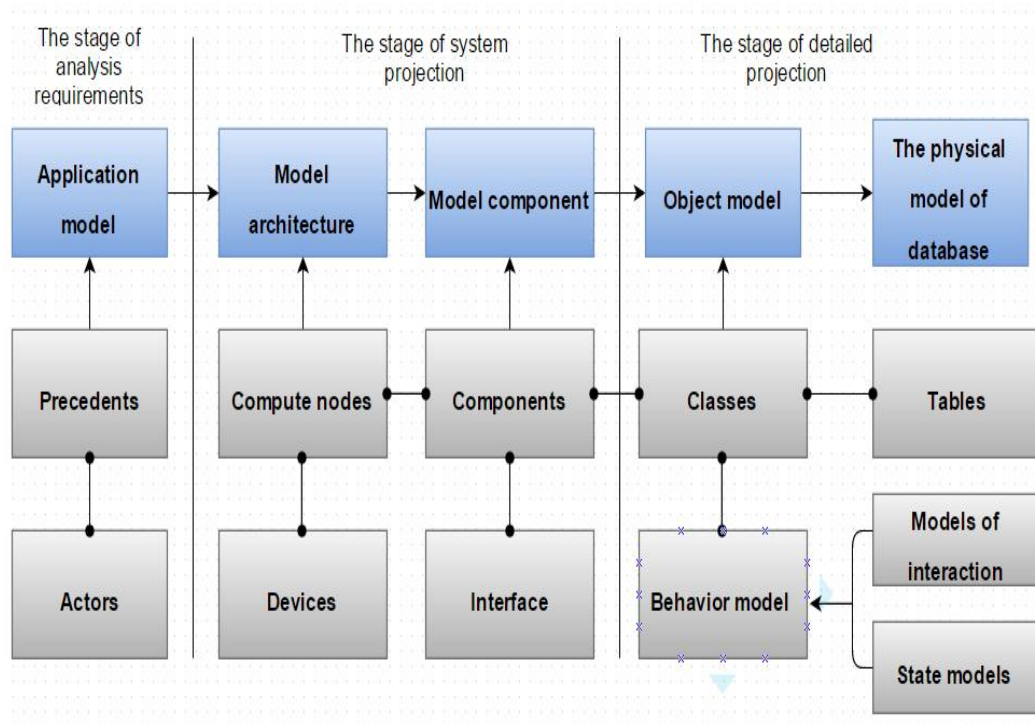


Figure 1 - Development stages of the system

For that purpose, proposed algorithm of using of a common object model for the analysis of requirements and the specific construction of the distance learning system:

Step 1. Define baseline scenario training

Determination of the baseline scenario of training necessary to ensure the "starting point" for the analysis of the system. Since a set of basic scenarios covers the main scenario, using of them provide speed up the process of analysis, which facilitates the identification of the main characteristics of technological learning system.

Determining the baseline scenario allows you to concentrate on the development of specific modules of the training system, and to have a framework for defining requirements and interactions in the system.

Step 2. Determination of including subsystems

Limit the scope of analysis and design by selecting the appropriate subsystems. At this stage it is also possible to conduct the decomposition instruction system into disjoint subsystems that may be designed and analyzed independently. This will reduce the complexity of simulations. In analysis of existing training systems, this step also allows you to determine what requirements and subsystems are not implemented in the training system and, if necessary, carry out adjustments.

Step 3. Determination of necessary level of detail, and selecting appropriate function of the basic set

After determining the subsystems included in consideration by the base object model, there occurred determination by desired level of detail. Selecting the level of detail, proposed by general model that will be further modeling. Determination set of functions appropriate to the assigned tasks

Step 4. Amend the functions and actors

Analyzing specific system users and functions, and make changes to their description or add a set. Based on the requirements for the system, consider the class diagram and the total for each package separately, and analyze the static structure of the system.

Step 5. Reconfiguration of system

Verification of compliance between changed models (for example, class models and interaction models). Ending the stage of analysis, and pass to software development.

For the realization objectives of the course in terms of the model of distance learning is advisable to choose the forms and methods of training, developing intellectual skills and abilities of the student-led training. For this purpose, modular technology with combination of Internet technology, which involves the use of printed educational materials, videos, computer disks, combined with interactive telecommunication technologies for communication between a student and a teacher.

Thus, the analysis of the factors determining the need for distance education, revealing a steady trend widespread use of computer technology, engineering the distance learning technology on the principles of modularity and continuity, creation of model of distance learning suggest practical actions focused on the transition of high school to distance education.

Because real systems often change over time, then there will be a requirements for the new software system. As a result, the system requires modification. Object approach makes it

easy to incorporate new facilities and eliminate obsolete without significantly changing the viability of the system. Using this developed model, during modification of system, makes it possible to eliminate the unwanted effects of changes. As they do not break the established structure of the system and only change the behavior of objects.

Considered and solved problems related to modeling the logical structure of educational facilities and the dynamics of their interaction in the performance of system processes. Despite the active development of systems of distance learning, these objectives are still relevant for all system developers.

Bibliography (Transliterated)

1. Semenova N, Slepukhin AV Technique of use of ICT in the learning process. Part2. The methodology of the use of information technology education: Textbook / Ed. B. E. Starichenko. - Yekaterinburg: Ural Mountains. state. ped. University Press, 2013. – 144p.
2. Traynev VA Distance Learning and Development / VA Traynev, VF Gurkin, OV Traynev. - 2nd ed. - M .: Publishing and Trading Corporation "Dashkov i K", 2008. - 294 p.
3. Orchakov OA, AA Kalmykov Design distantsionnyh courses. - M .: Publishing House MNEPU, 2002. - 50 p.
4. Clear George. Systemology: automation solutions system tasks. - M .: Radio and Communications, 1990. - 544 p.
5. Plotnikov SV Algorithm evaluation of functional reliability of the operators of complex technical systems // Informatization of Education and Science. 2010. № 2. 114-126 p