

Importance and Features of Unified Database Development in Assessing the Quality of Education

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Abstract— The paper investigates the importance of the development and application of unified data base in monitoring and assessing the education system. The management of education quality is assisting decision-making in the determination of its further development directions, its improvement and reconstruction.

Keywords— virtual space; monitoring; assessment of the education quality; unified database

I. INTRODUCTION

Promoting the development rate of education, improving the quality and advancing fundamentally the management of its supervision is one of the key motivating factors for the progress of society and successful future of the country.

At present, delivering the information in connection with the coverage and efficiency of the education system of the country to interested parties, which determine educational policy, is of special importance.

Despite some improvements in the field of education quality assessment in the country, there is a series of problems with the existence of reliable and comparable information about the real situation education system. The main problem is sparseness and discrepancies in the activities of various management structures of the education system. There still exists an uncertainty in the approach to term "Quality of education". Therefore, the problem of the formation of complex scientific and methodological basis and of the development of the unified data center should be solved as soon as possible.

Because, establishing unified database over the educational system it will be possible to make the monitoring of education more effective and efficient. And this will lead to the regular monitoring of the development dynamics of the education system, as a result, to the promotion of the quality of education and to the perfection of its management [1].

II. THE INEVITABILITY AND SIGNIFICANCE OF ESTABLISHING A UNIFIED DATA BASE

Increasing ICT application in education, the integration of information technologies into educational process, computerization of educational institutions are the main conditions for the solution of the problem of unified database establishment. In other words, the issues, such as informatization of the education system - establishment of material-technical base, delivering server services,

application of local networks, Internet connections, in a word, Internet technologies in the educational process should be solved. Establishing dynamic management system and data center any educational institution, the digital networks, as well as unified educational portal of the educational institutions may be formed within the country.

Collecting digitally all available information on each indicator of various educational levels in a virtual space will easily and quickly provide the establishment of a unified data base.

Emergence of the unified data base will unify management, service, research, methodical and educational and information-technological centers of all education levels in the virtual environment. This unified education-information infrastructure will also make possible the creation of new system for management, monitoring, accreditation, certification and knowledge assessment within itself [2].

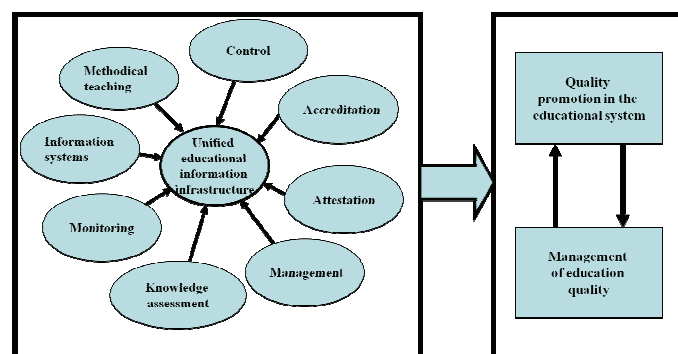


Figure 1. Scheme of the unified database formation.

III. A NEW MECHANISM FOR MONITORING AND ASSESSMENT SYSTEM

Large-scale monitoring and the assessment system of its results will be available with the electronic information systems of the education system. In this case, it will be possible to record adequate situation of educational system and its sub-systems wholly, and to compare with similar establishments. Furthermore, the analysis of the current situation of different levels of education, forecasting and decision-making on the chief development directions will be possible. Basing on the information monitoring, territorial management of educational system is of great importance.

Depending on the contingent of educational participants or on the administrative-territorial belonging of the educational institutions selected for the monitoring of education quality, the hierarchy of its levels emerges: if the control-assessment is conducted with the same pedagogical measurements and processing procedures of the results at the same time, in this case, each higher level collects the results of the lower levels consecutively. The main feature of such kind of monitoring system is not only vertical, but also horizontal control of the results of the same indicator [3]. It is obvious, that the structure of this environment must be hierarchic, i.e., educational institutions (e.g., schools) should be in the lower level, and the management institutions in the higher levels of this structure. At the same time, statistical data (reports) obtained from the educational and management institutions at all levels must have double-directed collection system from down to up: i.e. as the lower-level data is possible to be "collected" and stored, this data should be processed statistically in advance and transmitted to the "upper" level.

Thus, collection of the data on the basis of performance indicators of all district (city) and rural schools from "down" to "up" in an electronic form in the data center will enable the collection of information throughout the republic, and in this case, monitoring and assessment process will be realized more efficiently.

The monitoring results will enable the identification of concrete measures to be taken in connection with the promotion and effective management, as well as the assessment of the situation of the education system quality. Establishing dynamic control system within each educational institution will also facilitate electronic realization of the results of training indicators, such as an appropriation level of the educational material, the quality assessment of each learner and of the groups (class, school) in a whole, participated in the training process, attendance, and so on.

IV. THE ROLE OF THE APPLICATION OF E-SCHOOLS IN THE DEVELOPMENT OF THE UNIFIED DATA BASE AND THE ADVANTAGES OF THE ASSESSMENT THE EDUCATION QUALITY

It is known that the initial development of electronic educational system has already been founded, a number of e-schools on comprehensive educational systems have been established. "The state program on the informatization and computerization of schools within 2008-2012 years" will enable effective and comprehensive solution of above-mentioned issues [4]. Pilot project "E-schools and e-management of the education" is being realized within the framework of this program. A number of schools are functioning as "e-schools" in Azerbaijan. The initial stage of the project is decided to be applied in the cities, and the later stages in the regional and rural areas. During this process the schools must be provided with server services, and with the local and the global Internet network access. Establishment of the dynamic management system of the school enables the implementation of each training data in an electronic form

and the collection of the results in a single base. The project application promises the provision of full access to the data such as an academic schedule of the school, e-journals, virtual grade book, information about the teachers, as well as their photos, conducting tests and examinations from any point of the world within 24 hours.

Formation of a single e-learning space in a national level, development of e-learning systems, and improvement of scientific and methodological framework are the main problems. Training materials of each educational institution - textbooks, lecture, seminar and test materials must be designed in an electronic form. Conducting the lessons with the help of electronic means will facilitate the automation of training process. And it will enable an effective control of education and cause promoting the qualification of the students and teachers constantly.

The program implementation considers informatization of all secondary schools of the republic. Though conducting monitoring and assessment is a complicated process, it has the following advantages in terms of e-schools formation:

- Online database with facilitate the regular monitoring of multilateral performance of the educational system, required data collection, systematization, and analysis, as well as comparative analysis and evaluation of its results, and will meet all reliability and operativeness the requirements more effectively;
- As the all subjects in schools may be taught by means of electronic textbooks of multimedia nature, and realized through new information technologies, i.e. computers and other devices, the perfection and reproduction of textbooks, subject programs and so on may be possible basing on the results of the assessment analysis of students' knowledge;
- Using new technologies during the transfer of pedagogical skills of teachers enables verification of their knowledge and effective control on education, well as. Consequently, it will cause the constant development of knowledge and skill of the teachers;
- Monitoring and assessment results are available on the Internet for everyone (for example, any parent is able to track indicators such as success of their children, attendance, learning level, assessment of students' knowledge and their control) at any time and any point of the world via computer or phone;
- High-level and short-term monitoring and assessment is guaranteed via virtual space.
- As the collection of all information with the formation of "Electronic Schools" and other issues are realized in an electronic form, the work of the employees engaged in the assessment process is eased, and there is no need for paper carriers;
- Application of new mechanism for monitoring and assessment system over the education system will provide to operatively analyze the current state, to manage and evaluate the monitoring processes, to form effective management system of education, i.e. the implementation and execution of public programs for education development, and finally to make optimal decisions;

- Being an effective tool for the management of the training quality, it will facilitate to solve improvement and management issues, along with the quality identification.

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Thus, establishing an appropriate assessment system with the help of the unified data base of the education system at the country level will be of great importance in the qualitative and quantitative assessment of students' knowledge. Delivering the reliable information obtained as a result of the assessment to the educational management bodies and to the public on time will make new decision-making on the development of education possible, and will contribute to the formation and development of positive public opinion.

A unified monitoring and assessment system shall be established to evaluate performance of the educational institutions. The problem solution requires the management of education system quality, systematical and continuous implementation of the monitoring and assessment system for its promotion [5].

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