International Journal of Advanced Science and Technology
Vol. 29, No. 9s, (2020), pp. 5736-5741

Developing and implementing Information system administering educational process at Tashkent State University of Uzbek language and literature

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Abstract

The article discusses the issues of developing and implementing modern informational system of managing educational process. The grounds for creation and implementation of educational management system based on the thorough analysis of the system existing now and meeting our national characteristics are discussed. Besides, business process of management of the educational process are exampled by presenting modelling CA Erwin Modeling Suite 7.3.

Keywords*: educational information systems, business processes, interactive services, distance learning, information systems concepts.*

INTRODUCTION

The government of Uzbekistan pays a lot of attention to improving the quality of education, improving the education system, upbringing a comprehensively advanced generation. To achieve this goal, 13 Laws of the Republic of Uzbekistan, 5 Decrees of the President of the Republic of Uzbekistan, more than 40 resolutions of the President and the Cabinet of Ministers of the Republic of Uzbekistan and about 1000 regulatory documents have been developed [1,2].

The use of information and communication technologies (ICT) is important in modern education. Automating key learning processes through ICT will not only free users from the most demanding functions, but will also enhance the effectiveness of the learning process.

The advancement of computer technology, mobile devices, multimedia tools and web technologies improves the quality of training highly qualified personnel based on the e-learning system.

Also, the introduction of comprehensive information on the effectiveness of business processes requires extensive use within the framework of MRP / ERP or other concepts. In this regard, the systems and standards for the introduction of e-learning in foreign countries have been developed, and the process involving enhancing them is going on. The most important and urgent issue today is the large-scale implementation of the work on integrating the educational process of foreign educational institutions with the national education system while preserving our national traditions.

EXISTING EDUCATIONAL IS (INFORMATION SYSTEMS)

An analysis of educational information systems in foreign countries shows that the system has achieved great success in higher education. The main objective of the analysis is to identify the class of general and subject areas specific to the business processes of higher education establishments and management of education. The results of the analysis show that the flow of information related to many objects of the learning process and their interaction is simultaneously involved in both management and learning. At the same time, the detailed information on the object and the form of its presentation will be automated in business processes.

In particular, the collection of student data in the system supporting business process at the end of the semester is very different from the system that provides access to e-learning resources. Therefore, an optimal method of handling object information is required. That is, it is required to develop a method which could allow to present the information in classified contexts and store them in distributed form .

In e-learning distributed objects include students, faculty, departments (master's specialties) and academic groups, model and working curricula, and logistical support. The proposed approach will

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provide the organization with informational support of new business processes in the development and implementation of new disciplines, which cannot be studied in an unreliable manner.

The analysis also shows that local information systems functioning separately in the management of higher education institutions (faculties, departments, departments) do not fully meet modern requirements. Therefore, it is important to design and implement the information system that will fully cover the activities of the main HEI structures.

There are three types of development and implementation of the higher education management information system:

1. Information systems created on the basis of ERP-systems (Axapta, SAP R3, etc.)

2. Procurement and implementation of ready software in higher education.

3. Creation of a national university management information system.

Each of these approaches has its advantages and disadvantages. In particular, the main disadvantage of the first approach is the high cost of the ERP system. Also, fixing and customizing an ERP system requires additional consulting services (support, implementation and continuous monitoring), as well as complex operations.

The introduction of the second approach may require less funds; however,the existing foreign educational information systems may not be fully compatible with national characteristics. That is, the information systems underlying this approach may not be fully consistent with strictly established business regulations in current educational environment in our country.

Therefore, the development and implementation of a national higher education administration information system is an important area in the education system of the country. The solution to this problem does not only lie in the organization of the education system on the basis of modern requirements, but also the integration of e-learning with the e-government system [7,8].

In the implementation of the ABT project in higher education, modern methods of designing system analysis tools have been used, including object-oriented analysis and design. A variety of CASE tools can be used to design information systems [3,4]. In particular, the objects and processes of the educational process at TSUULL have been modeled by CA Erwin Modeling Suite 7.3 software [5].

Business processes in electronic education system

During the formation of the e-learning system, the links and processes of the university educational process objects were identified and the ERD and DFD diagrams of the information system were formed. The scheme of linking the main business processes of the e-learning system is presented below:

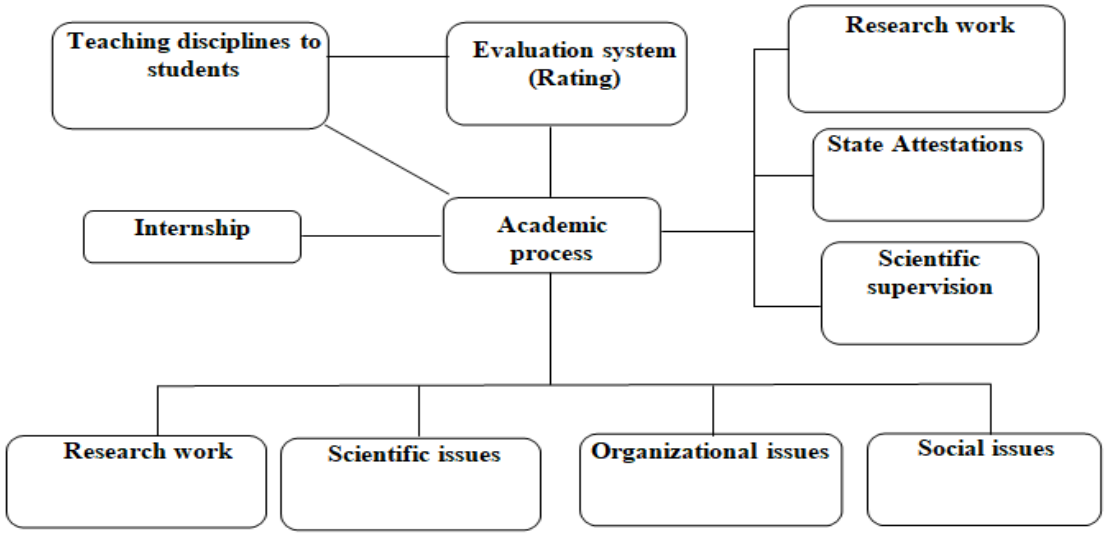

Figure 1. The scheme of educational process of the university

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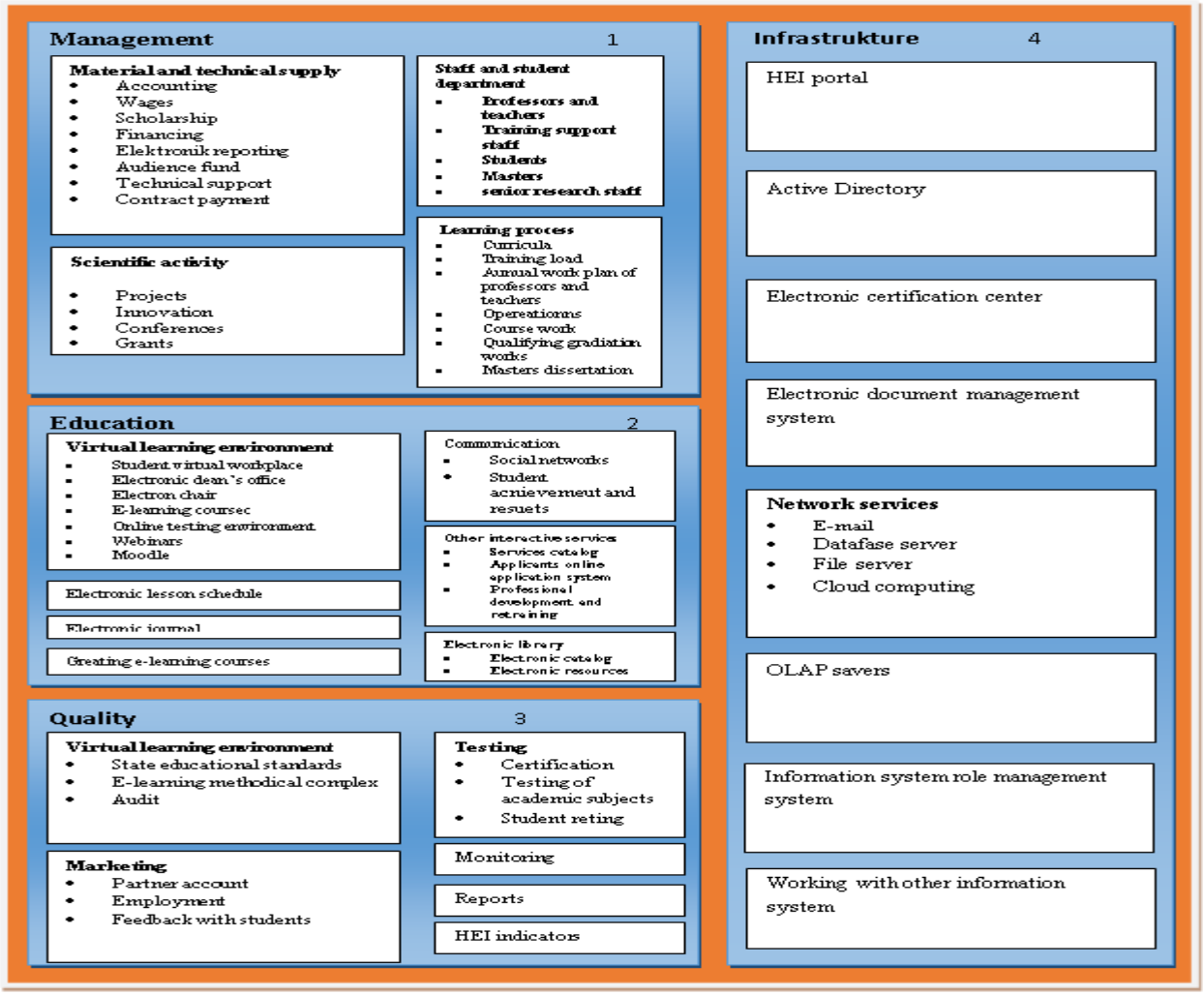
Business processes in ETS are performed in the following sequence:

- Determination of specialties of masters and directions of education;
- contingent formation;
- Identification of classrooms, chairs, faculties and departments;
- Distribution of academic disciplines between departments;
- Generation of information about syllabi, practices, coursework and SAC;
- Formation of working curricula for semesters;
- Development of training schedule;
- Determination of the faculty (list of faculty members);
- contingent editing, subgroups, and potting;
- Determining the size of the teaching staff;
- Calculation of training load;
- Distribution of training load;
- Formation of modules of educational disciplines;
- Development of the content of the training modules;
- Creation and editing of electronic timetable;



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2-Photo. Blocks of business process at HEI

Development of a rating schedule for academic subjects;

- Keeping an electronic journal;
- Keeping electronic rating records;
- drawing up a schedule of re-assignment of rating controls;
- Protection of SAC and graduation qualification works;
- accounting of results of the state certification;
- Completion of the session: transfer from course to course, scholarship award and exclusion;
- Accounting of student practices;
- Accounting of scientific activity;
- Keeping records of research works of professors and teachers;
- Accounting of scientific-methodical works of professors and teachers;
- Keeping records of organizational and methodical work of professors and teachers;
- Keeping records of social and educational work of professors and teachers;

We divide these business processes into 4 conditional blocks [5]: Management, Education, Quality, Infrastructure (Figure 2).

The "Management" block has the functions needed to manage the learning process, and it controls the financing of the educational process.

The block "Education" consists of the functions of the organization of the e-learning system at the university, the formation of e-learning materials and the evaluation of students' knowledge. The unit also has a training system, additional paid training courses, training, and electronic payment services for licensed electronic content. There is also a constructor for the creation of e-learning courses in the "Education" block, and it is possible to form an E-learning methodological complex (MAPC) on the module of the subject.

The block "Quality" has functions aimed at improving the quality of the educational process of the university, and monitoring and forecasting of students' knowledge systems are carried out. In this block, all types of reports that must be received from the HEI for various organizations and partners are formed electronically.

The “Infrastructure” block serves to fulfill the functions of the above blocks. The block includes software, telecommunications, databases, and network services. The unit also has an electronic document management system that controls the movement and execution of all types of external and internal documents within the HEI.

Below is given a link diagram between the state educational standards of HEIs, curricula, directions of study and master's specialties, students, professors, academic subjects, rating, rating schedule, results, educational materials, training modules:

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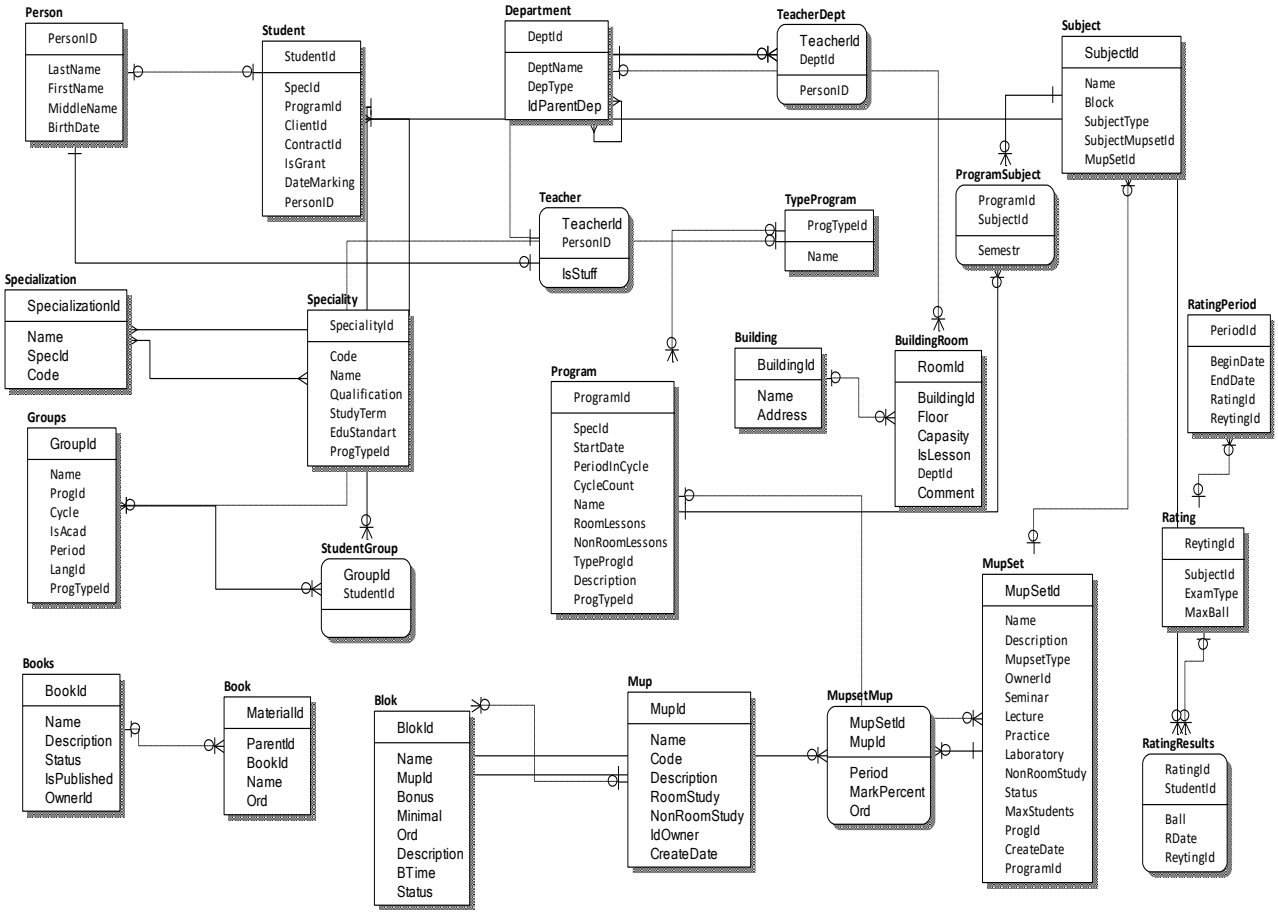

3-Photo. ERD Diagram of EES

This diagram consisting of the main EES objects, has been created by CA Erwin Data Modeler 7.3 [5] in the IE (Information Engineerring) notation, which is one of the key information modeling methodologies. ERDs of all EES objects are also fully developed through IE notation.

CONCLUSION

Development and implementation of the educational process management information system of the TSUULL will ensure the improvement of the quality of training, implementation of knowledge and skills gained in the course of science, education, implementation of business activities, as well as the development of the national economy.

Also, as a result of the development of an information system, the convenience of education for the population will be increased through the use of distance learning technologies.

The economic importance of the information system will be to improve the efficiency of higher education institutions, improve financial performance and strengthen the economy. This will further increase the chances of TSUULL to provide interactive educational services. Significant increase in efficiency of business processes providing interactive educational services is a practical result of development and introduction of ABD at TSUULL.

The process of developing and implementing IMS at TSUULL can be considered as a new stage of informatization of higher education institutions, ie transition to the smart university.

REFERENCES

1. Law of the Republic of Uzbekistan No. ZRU-395 of December 9, 2015 of the President of the Republic of Uzbekistan.
2. Resolution of the President of the Republic of Uzbekistan dated September 19, 2014 No PP-2237 "On attracting foreign investment in the development of information systems and software products."

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Copyright ⓒ 2020 SERSC

3. T.I. Aliev Fundamentals of system design. - St. Petersburg: ITMO University, 2015. - 120 p.
4. I.Yu. Kotsyuba, A.V. Chunaev, A.N. Shikov. Fundamentals of designing information systems. Tutorial. - St. Petersburg: ITMO University, 2015. - 206 p.
5. V.I. Gorbachenko. G. Killed. Information systems design with CA Erwin Modeling Suite 7.3. Penza 2012 131 p.
6. A.A. Tyutyakin. Automated university management system integrated with e-learning tools.
7. R.D. Aloev. Creating an e-learning environment in higher education. Monograph. Tashkent. 2011y. 220b.
8. B.B.Elov. Information system that manages the educational process of the university. Monograph. Buxoro 2006 y. 260 b.

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