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## Realization of Distance Educational Technologies on the Basis of Automated Informational System

Baigusheva K.M.<sup>a\*</sup>, Baigabylov N.O.<sup>b</sup>, Jarassova G.S.<sup>c</sup>, Akanova A.S.<sup>d</sup>

<sup>a</sup> L.N.Gumilyov Eurasian National University First, 5 Munaitpasov Street, 010008, Astana, Kazakhstan

<sup>b</sup> L.N.Gumilyov Eurasian National University First, 5 Munaitpasov Street, 010008, Astana, Kazakhstan

<sup>c</sup> S.Toraigrov Pavlodar State University, 64 Lomov Street, 140008, Pavlodar, Kazakhstan

<sup>d</sup> S.Toraigrov Pavlodar State University, 64 Lomov Street, 140008, Pavlodar, Kazakhstan

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### Abstract

The implementation of distance technologies at the university is an important goal of education today. Use of distance technologies gives ample opportunities for getting an education and professional development for a wide range of the population. For the realizing distance technologies of training is developed the automated information system "e-Learning CDT". The reached results create conditions for wider use of distance technologies in the conditions of continuous education.

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### 1. Introduction

Emergence of telecommunications and the computer changed traditional and most conservative views on educational process. Along with dynamic development of information and telecommunication technologies vocational training of specialists is improved. Development and modernization of methods, forms and technologies of training led to emergence of distance learning.

Distance learning is developing rapidly in many regions of the world. It is possible to list a large number of large universities of the world which develop distance education: China Central Radio and TV University (China), Indira Gandhi National Open University (India), Payame Noor University (Iran), Korea National Open University (Korea), University of South Africa, Sukhothai Thammathirat *Open University* (Thailand), Anadolu University (Turkey).

Application of distance technologies gives ample opportunities for education and professional development for a wide range of the population, and also for persons with limited opportunities, on the job, regardless of geographical remoteness, with flexible hours.

The long-term purpose of development of distance education in the world is to make possible for each pupil, in any place, to study the program of training of any college or university. It assumes transition from the

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\* Corresponding author: Baigusheva Kanagat. Tel.: +7-702-385-4427.

E-mail address: [baigusheva\\_km@enu.kz](mailto:baigusheva_km@enu.kz)

limited concept of physical movement of students from the country to the country to the concept of mobile ideas, knowledge and training with the purpose to distribute knowledge by means of an exchange of educational resources.

## 2. "E-Learning CDT" automated information system

Necessary condition for realization of distance educational technology is the uniform educational information environment. The distance educational technology (further DET) in educational process of S.Torayghyrov Pavlodar State University (further university) is applied since 2008 and is realized on 8 specialties: Power Engineering, Automation and Management, Information Systems, Social work, Economy, Management, Account and Audit and Finance.

For the introduction of DET the following tasks was defined by the university:

- Development of regulatory documentation;
- Choice of optimum distance educational technologies and development of educational and methodical ensuring educational process.
- Adjust material and technical provision of educational process with application of DET;
- Professional development of tutors.

Organization work on DET implementation based on the principles of realization phase and controllability of achievement of results of each stage is conducted in the following directions:

- Improvement of educational process quality;
- Formations of full and available educational and methodical provision to students,
- Increases in role of students' independent work,
- Improvement in the mark and rating monitoring system of knowledge for distance learning,
- Connections of all educational and methodical documentation and educational process to the university quality management system.

At the university uninterrupted functioning of the hardware-software complex, demanded level of information security is provided, information and technical support of computer aids and the software is carried out, access to world information resources is provided.

All buildings of the university are united in a uniform local network on the basis of fibre-optical communication lines. The wireless network access to the Internet (Wi-Fi) functions. For the last 3 years the park of computer facilities is considerably updated, the most modern equipment and the license software is acquired. The created telecommunication provision of the university allows carrying out regularly scientific and technical videoconferences on the basis of video conferencing.

Information and technical support on deployment of DET at the university is carried out by means of developed distributed automated information system (further AIS) "e-Learning CDT". AIS "e-Learning CDT" is intended for automation of management processes of the university, realization of educational technologies, it also provides information security from unauthorized use.

AIS "e-Learning CDT", as any information environment, has the methodology, ideology, navigation and features. AIS "e-Learning CDT" includes the following subsystems with the corresponding functional:

- 1) Private office of the teacher – ensuring transparency of educational process and controllability of its main indicators within credit technology, and also for granting to teachers of opportunities of distance on-line and/or off-line interaction with students, receiving, processing and transfer of necessary information for work;
- 2) Private office of the student – implementation of access to the handbook, registration on disciplines, viewing of the list of the teachers fixed on disciplines, schedules of studies, electronic educational and methodical materials, testing organization on discipline for an assessment and a self-assessment of knowledge, viewing grades for the current semester, for the previous academic periods, using a web chat for distance on-line interaction with teachers and with students in group or individually;
- 3) Planning – formation of curricula, catalogues of elective disciplines, the academic calendar, etc.;
- 4) Staff – drawing up the list of teaching staff of a department on the basis of normative and planned documentation;
- 5) The educational and methodical complex (EMC) – network base of an educational and methodical complex of disciplines and an educational and methodical complex of the specialty, formed by teaching staff;

- 6) Registration on disciplines – a subsystem for students registration on disciplines of the following course with the purpose of following the rules of the organization of training on credit technology;
- 7) The contingent – all information on the contingent of full and part-time undergraduate, postgraduate and doctoral students;
- 8) Orders – formation and processing of orders on the organization and management of educational process on the basis of information, accumulated and dynamically updated in the base of distributed IS;
- 9) Students educational achievements (SEA) – formation of mark sheets and reporting documentation;
- 10) The electronic register of students educational achievements (ER of SEA) – formation of monthly and weekly reports on students progress in the SEA in the register form, filled in the Internet or the network Intranet by the teachers teaching the corresponding courses;
- 11) Administration – management of the purpose of access rights to modules, generation, change of passwords and codes;
- 12) The schedule – formation of study schedule;
- 13) Applicant - formation of the contingent of the first course, input of applications for competition, enrolment a conclusion of statistical information on applications for the enrolment, reference on input of applicants, generation of applicants acceptance orders;
- 14) Testing – carrying out different types of students' attestation by a computer testing method;
- 15) Anti-plagiarism – check of degree, course, master and other types of works on existence of a text loan;
- 16) Web chat (system of an instant exchange of messages) and a board of joint using – the organization of dialogue communication.

At present active work on expansion of functionality of AIS the following modules conduct "e-Learning CDT" for development of DET:

- Bulletin board for students;
- Tests editor for teachers;
- The organization of intermediate students testing through teachers and students private office;
- Web chat with video and audio communications opportunity of a teacher and a student, virtual rooms for carrying out classes' in-group with desktop translation;
- Introduction in web-chat elements of social interaction: vote, questioning, and polls;
- Organization of control of online classes according to the schedule.

All listed modules of AIS "e-Learning CDT" allow a student and a tutor to communicate in off-line and on-line mode.

Students have access to electronic educational and didactic materials on disciplines. Developed electronic educational editions in Kazakh and Russian languages in the directions: information technologies, natural sciences, law, technologies in mechanical engineering, technology, economy and business, the humanities, education, social sciences, technical science, services, language disciplines, are the knowledge base, both for the student and for the teacher.

For the period 2008-2012 45 electronic educational editions are examined. Advanced training courses for teaching staff on the use of information and communication technologies are systematically carried out. In private offices of teachers and students access to 35 electronic training courses on disciplines of general education and main disciplines is open.

### 3. Conclusion and Recommendations

Thus, one of the important conditions of successful realization of distance educational technology at the university is developed by automated information system "e-Learning CDT". Work on expansion of functionality and provided services are conducted constantly. Further realization of distance technology in the field of retraining of specialist for the industrial sphere is planned.

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