MODERN ELECTRONIC EDUCATIONAL RESOURCES FOR TRAINING FOREIGN CITIZENS

СОВРЕМЕННЫЕ ЭЛЕКТРОННЫЕ ОБРАЗОВАТЕЛЬНЫЕ РЕСУРСЫ ДЛЯ ОБУЧЕНИЯ ИНОСТРАННЫХ ГРАЖДАН

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The features of the development and implementation of e-learning technologies and elements of digital infrastructure in the educational process are presented on the example of electronic educational resources for training of foreign citizens in new specialties with the corresponding profilings of the II stage of higher education in English. A feature of the organization of training is the development and use of modern electronic educational resources as educational and methodological tools, which include means of remote interaction and automation of educational activities and implemented in the environment of the electronic educational portal (learning management system) of ISEI BSU (http://e-learning.iseu.bsu.by/). These developments have been successfully introduced into the educational process and tested with the participation of foreign students from the People's Republic of China and the Republic of Iraq.

Представлены особенности освоения и внедрения технологий электронного обучения и элементов цифровой инфраструктуры в образовательный процесс на примере электронных образовательных ресурсов для обучения иностранных граждан по новым специальностям с соответствующими профилизациями II ступени высшего образования на английском языке. Особенностью организации обучения является разработка и использование в качестве учебно-методических средств современных электронных образовательных ресурсов, включающих средства дистанционного взаимодействия и автоматизации учебной деятельности и реализованных в среде электронного образовательного портала (системы управления обучением) МГЭИ им. А. Д. Сахарова БГУ (http://e-learning.iseu.bsu.by/). Указанные разработки успешно внедрены в учебный процесс и апробированы с участием иностранных обучающихся из Китайской Народной Республики и Республики Ирак.

Keywords: electronic educational resources, training of foreign citizens, e-learning technologies, elements of digital infrastructure, learning management system.

Ключевые слова: электронные образовательные ресурсы, обучение иностранных граждан, технологии электронного обучения, элементы цифровой инфраструктуры, система управления обучением.

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Introduction. The requirements for competitive specialists in the labor market are constantly changing and growing, and educational institutions have to periodically modernize and improve educational programs and training technologies. These phenomena are reflected in the development of the higher education system for training personnel in accordance with the requirements of the information society.

In the educational institution "International Sakharov Environmental Institute" of Belarusian State University (ISEI BSU), new specialties with the corresponding profilings of the II stage of higher education in English have been opened:

1-33 80 01 "Ecology (urban ecology)";

1-33 80 05 "Biomedical science (applied immunology)";

1-33 80 05 "Biomedical science (cytogenetics)";

1-33 80 05 "Biomedical science (medical biochemistry)".

A feature of the organization of training in these profilings is the development and use of modern electronic educational resources as educational and methodological tools, which include means of remote interaction and automation of educational activities and implemented in the environment of the electronic educational portal (learning management system) of ISEI BSU (http://e-learning.iseu.bsu.by/). These developments have been successfully introduced into the educational process and tested with the participation of foreign students from the People's Republic of China and the Republic of Iraq.

Main part. Employees of ISEI BSU analyzed and used the experience of higher education institutions in the development and implementation of e-learning technologies and elements of digital infrastructure (computer, server and telecommunication equipment, computer networks and information systems for data transmission and processing, universal and specialized software, and so on) in the educational process, as well as advanced training of employees on digital

transformation in education. In particular, the main issues related to these problems are: the promotion of information and communication technologies in the educational process and the improvement of education in this direction; introduction of training practice using information and communication technologies; the introduction of information and communication technologies (learning management systems, cloud technologies, big data, and so on) in the educational process for education management; improving the education system, increasing competitiveness and integrating Belarusian education into the global innovation process; the use of information and communication technologies to expand the export of educational services and form the "University 3.0" model; social adaptation of educators to new innovative technologies; analysis of the effectiveness of digitalization processes in the education sector; a harmonious combination of innovative and traditional technologies for the training of comprehensively developed specialists; solving problems of the knowledge divide due to the fact that industries and technologies are changing much faster than educational outcomes and others.

The main goal of creating and using modern and convenient means of information and communication interaction in the framework of the opening of new specialties and corresponding profilings was the desire to implement the elements of digital transformation of the educational process, which consist in a significant qualitative and quantitative reorganization of the methods of providing educational services. Digital transformation in the field of education pursues not only the technical informatization of higher education institutions and the use of various information technologies, but also a change in educational forms and methods, as well as the educational process management system.

In the environment of the electronic educational portal of ISEI BSU the following distance learning courses for the relevant profilings are developed:

- 1-33 80 01 "Ecology (urban ecology)":
  - Computer visualization of environmental information;
  - Environmental data processing methods;
  - Environmental problems of megacities;
  - Introduction to specialty;
  - Legal regulation of urbanization and technosphere;
  - Medical and demographic features of urban ecosystems;
  - Optimization of urban development;
  - Organization and market of environmental services;
  - Phytotechnology of urban restoration and improvement;
  - Project management of innovations in ecology;
  - Theory and methodology of environmental researches;
  - Urban biota and methods of its study;
- 1-33 80 05 "Biomedical science (applied immunology)":
  - Applied microbiology;
- 1-33 80 05 "Biomedical science (cytogenetics)":
  - Applied microbiology;
  - Cell biotechnology;
  - Computer modelling of bioactive chemicals;
  - Cytogenetic methods for diagnosis of systemic pathology;
  - Introduction to specialty;
  - Methods of molecular diagnosis of chromosomal aberrations;
  - Microbiological diagnostics;
  - Molecular cytology and genetics;
  - Oncogenetics;
  - Organization and market of services in medical and biological industry;
  - Theory and methodology of biomedical researches;
- 1-33 80 05 "Biomedical science (medical biochemistry)":
  - Clinical biochemistry methods;
  - Clinical laboratory diagnostics;
  - Pathobiochemistry;
  - Pharmacological module. Clinical pharmacology.

These courses provide definite and discipline-specific graphical user interface and functionality for both students, teachers and staff (Fig. 1 - 5).

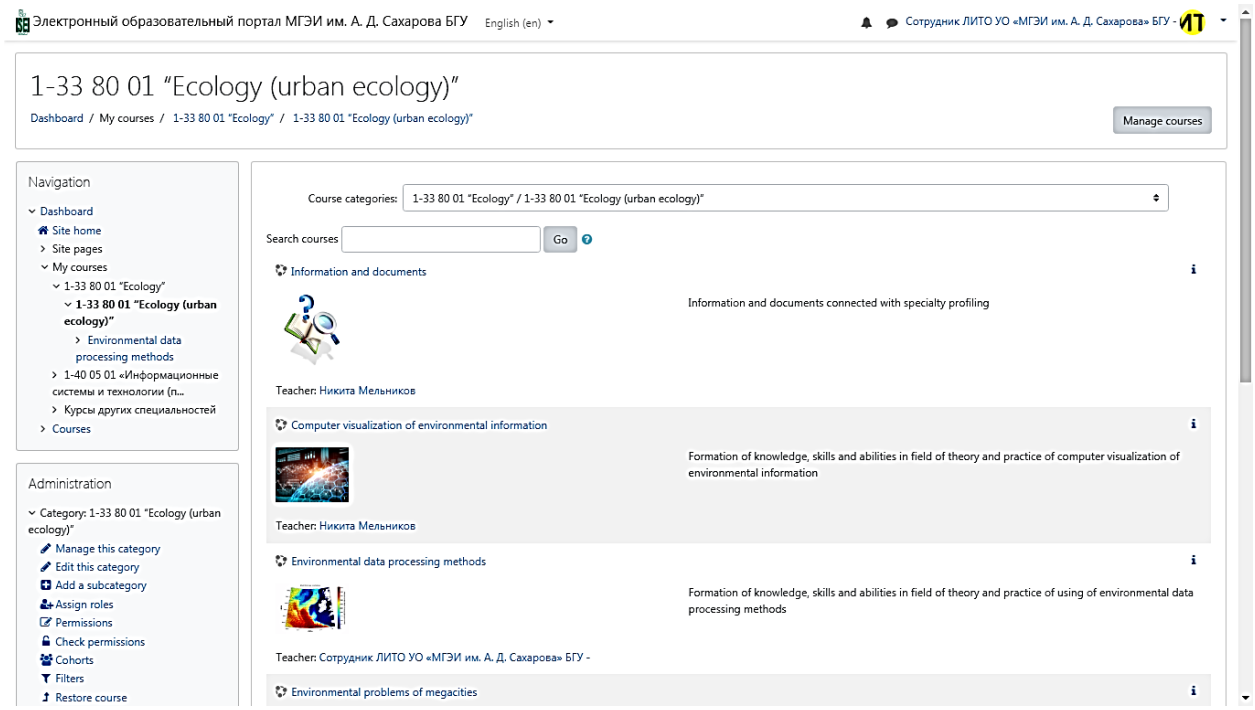

Fig. 1. Example of list of courses available to users with annotations

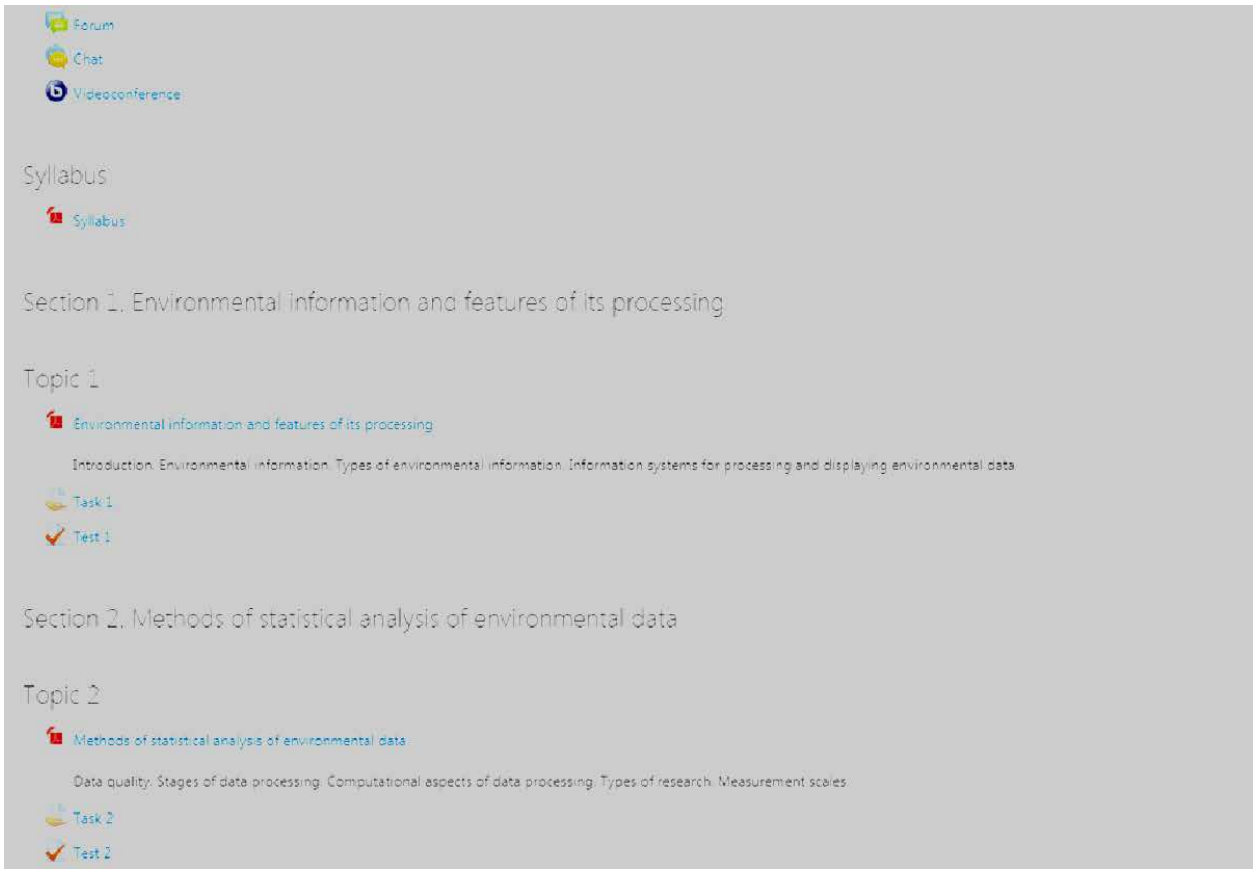

Fig. 2. Example of content and placement of course elements

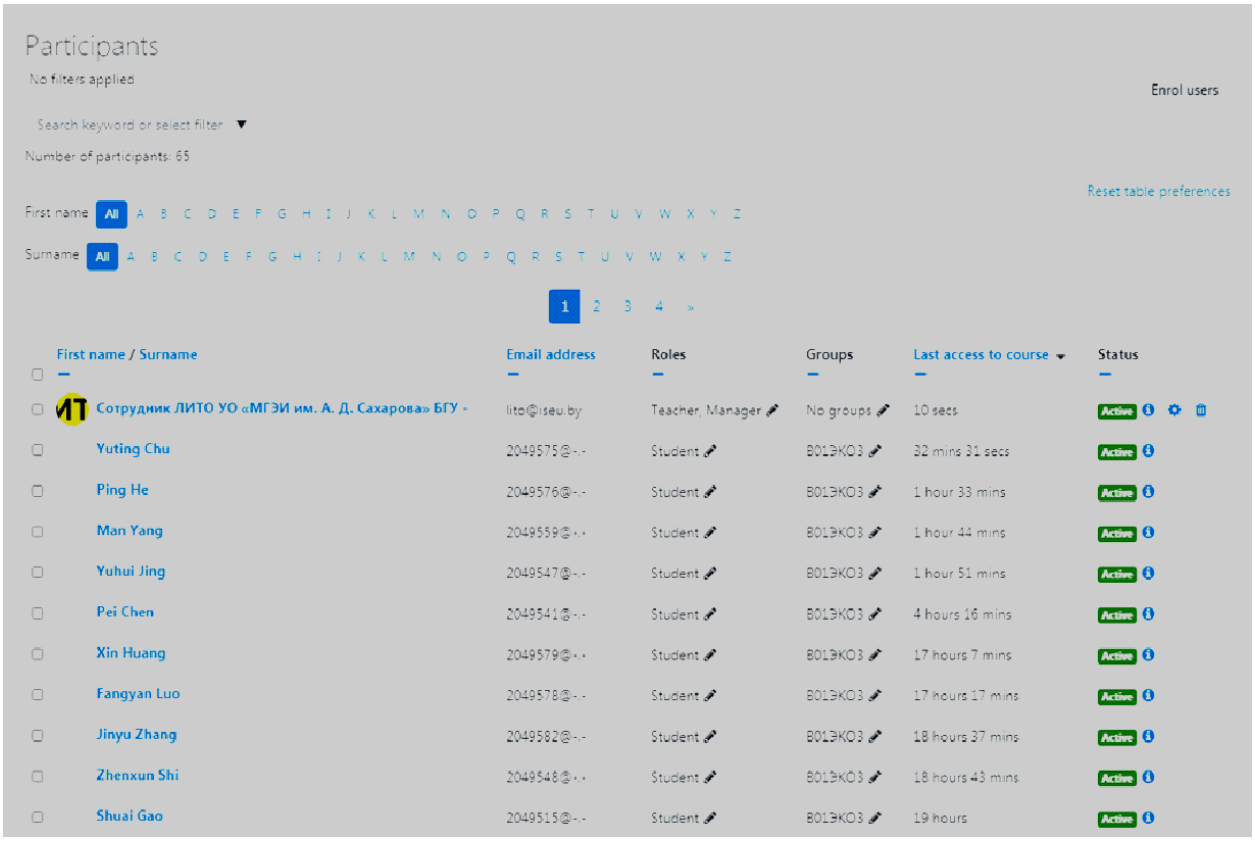

Fig. 3. Example of list of enrolled in course students and teachers

Fig. 4. Example of report on students' progress in tabular form

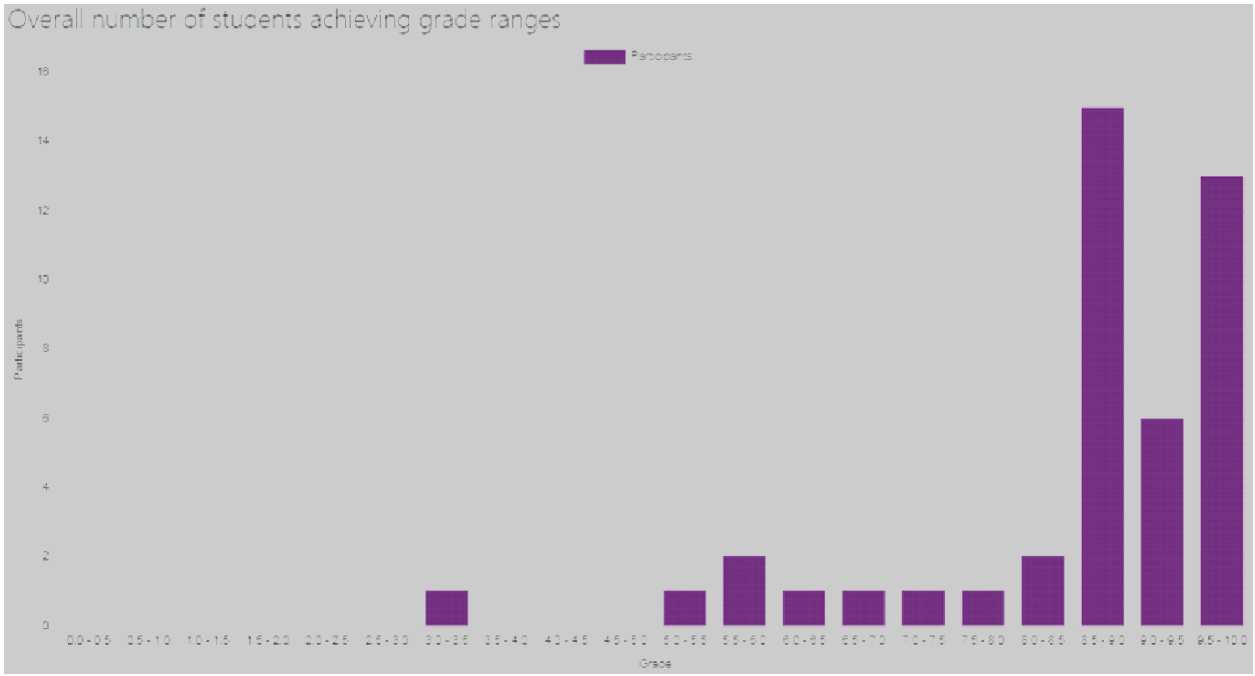

Fig. 5. Example of report on students' progress in graphical form

The developed electronic resources contain the following components, which make it possible to implement remote interaction for certain students (study groups) and teachers (departments):

- information and communication tools (posting news and announcements with the ability to create topics and attach files through the "Forum" elements, communication in the form of correspondence through the "Messaging drawer" and "Chat" elements and communication using video broadcasting through the "Videoconference" elements);
- automation tools for current and intermediate attestations (adding communication tasks, collecting and evaluating students' work, providing feedback from teachers through training elements "Task", sending any digital content (files), such as text documents, spreadsheets, images, audio and video files and so on from the side of students);
- means of remote integrated monitoring and control of the action (activity) of students and teachers and the progress (assessment of the quality of knowledge) of students (using elements "Logs", "Activity report" and "Statistics");
- other means of remote interaction and consultation of the teachers with students (using elements "Messages" and "Course blogs").

Alternatively or additionally, when assessing the results of assignments, teachers can require from students to enter their answers directly into the built-in text editor. They can also leave feedback in the form of comments, upload files with corrected student answers or audio feedback. Answers can be graded with points, a custom grading scale, or "advanced" methods such as rubrics. "Task" can also be used for the results of credits and exams, as well as for the performance (review) of master's theses. The final grades are recorded in special electronic grade journals.

Before starting the educational process students can be asked to get acquainted with the individual curricula of the specialty profilings and syllabi of courses. If they have any questions they can ask them in different ways using elements "Messaging drawer", "Forum", "Chat" or "Videoconference". Different information, instructions and guidelines to educational material (lectures, tasks, tests and so on) can be situated in elements "Forum". For example, students can be asked to make for teachers various reports or pass miscellaneous tests. There also can be questions for self-study assignments.

After the last topics of disciplines and before conducting credits and exams students can pass final tests, which contain definite number of questions and can be limited in time to a certain number of minutes. Before conducting credits or exams, students can familiarize themselves with the lists of attestation questions in elements "Questions for credit" and "Questions for exam". For conducting the exam, they can obtain virtual exam tickets in elements "Exam tickets' questions". In this case, the formations of answers are not required, but it is necessary to confirm (agree) with the received questions by writing the message "Confirmed". Next, they can create virtual exam sheets in element "Answers to exam tickets' questions". In this case, it is possible (recommended) to attach files of various formats, including graphic ones, containing answers to questions of exam tickets. The credit and exam dates and times are on schedule. Students' previous academic results are also counted towards their final grades.

Along with the provision of the educational process, the developed electronic resources make it possible to implement:

- innovative technologies to improve the quality of the educational process;
- elements of digital learning pedagogy and features of the development of educational programs;
- adaptation to the specifics of academic disciplines and the conditions for their development;
- methodological and technical support of the educational process;

• development of the competencies of teachers and specialists in the context of digital transformation of education and educational innovations;

• lifelong education based on massive open online courses, personal learning paths and universal competencies (soft skills) (critical thinking, creativity, management skills, and so on) in subjects of the educational process.

By employees of the educational and methodological laboratory of innovative education technologies of ISEI BSU the periodic monitoring is carried out with the aim of visual and functional optimization of courses, resources and e-learning tools for mobile devices, analysis of their structure and principles of development, opportunities for support (development and improvement) and use, as well as identification of problems and features of control and assessing the quality of students' knowledge using them.

Conclusion. Thus, the experience of developing electronic educational resources for teaching of foreign citizens has shown that in the process of digital transformation, education is becoming more and more global, and one of the priority areas of digital transformation is the development and improvement of distance learning technologies, the use of which can lead to an active transformation of forms and methods of traditional teaching. At the same time, a model of networked training of students can be implemented with the ability to study anywhere and at any time. The use of distance learning technologies in the educational process significantly increases its flexibility and attractiveness for students from other countries, creates the prerequisites for the implementation of individual educational trajectories and conditions for the export of educational services.

Developed and tested at ISEI BSU distance learning courses, electronic educational resources and tools for automating educational activities can be used both for teaching foreign citizens in English in a distance form of higher education at the II stage, and for the purpose of additional education as interactive Web-oriented means containing educational and methodological materials, replacing or supplementing the capabilities of electronic educational and methodological complexes by disciplines and intended for independent work of students (listeners), in the mode of authorized access [1 - 5].

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