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**DEVELOPMENT OF ELECTRONIC RESOURCES  
FOR SOCIAL AND HUMANITARIAN DISCIPLINES  
(ON THE EXAMPLE OF ALMATY UNIVERSITY OF POWER ENGINEERING AND  
TELECOMMUNICATIONS NAMED AFTER GUMARBEK DAUKEEV)**

*Abstract*

Nowadays there is a steady trend to introduce distance learning, create and support the IT infrastructure in education systems, and develop electronic educational resources in Kazakhstan. Given that, the creation of electronic and digital educational content in the social and humanitarian disciplines, and the formation of motivation to study the fundamentals of the social and humanitarian sciences are the important tasks in the country's higher education system.

The article is devoted to the process of researching the effectiveness of the application and preparation of electronic and digital resources in social and humanitarian disciplines at the Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeev.

During study, the authors relied on theoretical and applied research in the field of digital technological applications of foreign and native researchers.

According to the authors, the replenishment of library collections and their reorientation, taking into account electronic digital resources, are an important component of modern higher education.

In the course of the study of problems and prospects for the development of electronic resources, the effectiveness of the use and preparation of digital educational content and solving problems related to the identification of motivation and specifics of students' perception of electronic resources, general scientific research methods were used, such as analysis and synthesis, comparison, experiment, as well as methods of questioning and interviewing among the teaching staff and students of universities in Almaty.

The authors concluded that despite certain difficulties and costs, electronic resources are an important element of modern education and require investment of certain funds, permanent updating of their content, thus making them more popular for the consumer.

**Keywords:** Electronic resources; e-book; social and humanitarian sciences; Portal; MOOC

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**ӘЛЕУМЕТТІК-ГУМАНИТАРЛЫҚ ПӘНДЕР БОЙЫНША  
ЭЛЕКТРОНДЫҚ РЕСУРСТАР ҚҰРАСТЫРУ  
(ҒҰМАРБЕК ДӘУКЕЕВ АТЫНДАҒЫ АЛМАТЫ ЭНЕРГЕТИКА ЖӘНЕ  
БАЙЛАНЫС УНИВЕРСИТЕТІНІҢ МЫСАЛЫ НЕГІЗІНДЕ)**

*Аңдатпа*

Бүгін елімізде қашықтықтан оқытуды білім беру жүйесіне енгізу, білім беру мекемелерінің инфокоммуникациялық инфрақұрылымын қалыптастыру және қолдау мақсатында электрондық білім беру ресурстарын дайындаудың тұрақты үрдісі байқалады. Осындай жағдайда қоғамдық-гуманитарлық пәндер бойынша электрондық білім беру ресурстарын дайындау, білім алушылардың қоғамдық-гуманитарлық ғылымдардың негіздерін меңгеруге деген ынтасын қалыптастыру еліміздің жоғары білім беру жүйесіндегі маңызды міндеттердің бірі болып табылады.

Мақала Ғұмарбек Дәукеев атындағы Алматы энергетика және байланыс университетіндегі әлеуметтік-гуманитарлық пәндер бойынша электрондық білім беру ресурстарын қолдану және дайындау тиімділігін зерттеу үдерісіне арналған.

Зерттеуде авторлар цифрлық технология саласындағы шетелдік және отандық зерттеушілердің теориялық және қолданбалы зерттеулеріне сүйенді.

Авторлардың пікірінше, цифрлық білім беру ресурстарының маңыздылығын ескере отырып, кітапхана қорларын толықтыруды осы бағытта жүргізу саясаты заманауи жоғары білім берудің маңызды құрамдас бөлігі болып табылады.

Электрондық білім беру ресурстарын дайындаудың проблемалары мен перспективалары, цифрлық білім контенттерін қолданудың тиімділігі және білім алушылардың электрондық ресурстарды қабылдау мотивациясы мен ерекшеліктерін анықтау барысында талдау және синтез, салыстыру, эксперимент сияқты жалпы ғылыми-зерттеу әдістері, сондай-ақ Алматы қаласындағы жоғары оқу орындарының профессор-оқытушылар құрамы мен студенттері арасында сұрақ-жауап және сұхбат жүргізу әдістері қолданылды.

Авторлар белгілі бір қиындықтар мен шығындарға қарамастан, электрондық ресурстар заманауи білім берудің өте маңызды элементі болып табылады және белгілі бір қаражатты инвестициялауды, олардың мазмұнын үнемі жаңартып отыруды, осылайша оны тұтынушы үшін танымал етуге мүмкіндік береді деген қорытындыға келді.

**Кілт сөздер:** Электрондық ресурс; электронды кітап; Әлеуметтік-гуманитарлық ғылымдар; портал; ЖАОК

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**РАЗРАБОТКА ЭЛЕКТРОННЫХ РЕСУРСОВ ПО СОЦИАЛЬНО-ГУМАНИТАРНЫМ  
ДИСЦИПЛИНАМ (НА ПРИМЕРЕ АЛМАТИНСКОГО УНИВЕРСИТЕТА  
ЭНЕРГЕТИКИ И СВЯЗИ ИМЕНИ ГУМАРБЕКА ДАУКЕЕВА)**

*Аннотация*

Сегодня в республике сложилась устойчивая тенденция внедрения дистанционного обучения, создания и поддержки инфокоммуникационной инфраструктуры систем образования и разработки электронно-цифровых образовательных ресурсов. В таких условиях создание электронных образовательных ресурсов по социально-гуманитарным дисциплинам, формирование мотивации к изучению основ социально-гуманитарных наук являются одной из важнейших задач в системе высшего образования страны.

Статья посвящена процессу исследования эффективности применения и подготовки цифровых ресурсов по социально-гуманитарным дисциплинам в Алматинском университете энергетики и связи имени Гумарбека Даукеева.

При исследовании авторы опирались на теоретические и прикладные исследования в области применения цифровой технологии как зарубежных, так и отечественных исследователей.

По мнению авторов, пополнение библиотечных фондов и их переориентация с учетом электронных ресурсов являются важной составляющей современного высшего образования.

В ходе исследования проблем и перспектив разработки электронных ресурсов, эффективности применения и подготовки цифровых образовательных контентов, решения задач связанных с выявлением мотивации и специфики восприятия студентами электронных ресурсов использовались общенаучные методы исследования, такие как анализ и синтез, сравнение, эксперимент, также методы анкетирования и интервьюирования среди профессорско-преподавательского состава и студентов университетов г.Алматы.

Авторы пришли к выводу, что несмотря на определенные трудности и затраты электронные образовательные ресурсы являются важным элементом современного образования и требуют инвестиции определенных средств, перманентного обновления их контента, таким образом, делать более популярными для потребителя.

**Ключевые слова:** Электронный ресурс; e-book; социально-гуманитарные науки; Portal; MOOK

**Introduction.** The development of the E-Learning system within the framework of higher educational institutions in Kazakhstan for the current period is becoming a priority task in the implementation of the strategy of innovative development of the republic. Today, a distance learning system is being introduced in many universities of the country, interactive online seminars are being held, a database of electronic educational resources in the form of electronic syllabuses, electronic educational and methodological complexes and original electronic manuals have been formed and are constantly being updated to prepare the necessary conditions for the development of E-Learning.

The changed conditions of the educational process during the global pandemic, the transition to distance learning contributed to the further expansion of the use of electronic resources in universities of our country.

The use of electronic educational resources in the teaching of social and humanitarian disciplines also has become one of the most effective and attractive technologies for faculty in the higher education system of the Republic of Kazakhstan.

The Law of the Republic of Kazakhstan "On Education" notes that one of the tasks of the education system is the introduction and effective use of new learning technologies, including credit, information and communication technologies, which contribute to the rapid adaptation of vocational education to the changing needs of society and the labor market [1].

This problem is always in the center of attention of the President K. Tokayev. The head of the state always draws attention to maximum digitalization of the entire learning process, and electronic learning tools as one of the most important instruments for distance learning [2].

In this regard, the strategic prospects for the digitalization of the Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeev for 2021-2023 are: building an IT infrastructure based on the principle of a student-centered approach and ensuring the quality and transparency of educational services through the introduction of digital technologies [3].

**Literature review.** The theoretical and methodological basis for studying the problems and prospects of E-learning are the studies of domestic and foreign scientists. Models and trends of distance learning, effective strategies in online learning, the problems of transition to online distance learning are presented in the works A.G.Picciano [4], R.M.Paloff, K.Pratt [5]. The problems of introducing digital technologies into the educational process in organizations of higher professional education, the experience of using IT-technologies, the students' perception of the introduction of IT-technologies in higher education, the use of mobile computing devices in higher education are described in D.Kozlova, M.Pikhart [6], G. Joanne, M.M. Grant [7].

Of particular interest is the study by Greig Krull and Josep M. Duarte aimed at identifying new trends in mobile learning research in higher education, where the authors selected and analyzed 233 peer-reviewed articles from peer-reviewed journals [8].

No less interesting is the book by Bates, A.W. (Tony), which considers that every subject is different, and every instructor has something unique and special to bring to their teaching [9].

The studies of electronic sources on the example of studying the history of Kazakhstan are reflected in the works of domestic historians K. Alimgazinov and S.Zhakisheva [10].

**Research methods.** The study is based on theoretical and applied research in the field of digital technology application. In the study of the problems and prospects for the development of electronic resources, the effectiveness of the application and preparation of electronic and digital educational content, general scientific research methods were used, such as analysis, synthesis, comparison and experiment.

Questionnaire and interviewing methods were also used to solve the main research tasks related to identifying problems and prospects for the development of electronic resources among university teachers in Almaty. It was revealed that not all teachers are able to use the E-learning platform well enough. Most lecturers are discouraged by the financial costs of preparing e-books (for example, the salary of the programmer), the

dependence on having access to a reliable high-speed Internet connection and an Internet browser that allows the exchange media content.

To solve the following research tasks related to identifying the motivation and specifics of students' perception of electronic content, the methods of questioning and interviewing were also conducted among 117 undergraduate students who took part in it.

Most of the participants (86%) liked the idea of training online, thanks to the mobile application, you can connect to the lesson even from a mobile, which is very important in a megalopolis, it is easy to contact the teacher via chat or audio-video communication on the platform for distance learning. Also among the advantages of digital resources is the way they are stored – they are compact, always at hand and more accessible than paper options, the digital resources are also available on network databases.

The diversity available in the digital resource materials, the presence of control and measuring materials in them are arouse greater interest of students than paper books.

**Presentation of the results.** In 2011, JSC "National Informatization Center" began theoretical study and creation of educational materials in

digital format for the secondary general education system. At the same time, the project of the Ministry of Education and Science of the Republic of Kazakhstan "E-learning system (e-learning)" was implemented, which started in the same year in 44 experimental schools of the republic. The author of this article participated as the main developer (subject author) of the content on the discipline "History of Kazakhstan" for the 7th grade of secondary schools of the republic.

The content of digital educational resources that are presented within the framework of this project included the following components:

- Multimedia presentation of the material on the topic of the lesson;
- Interactive tasks on the topic of the lesson based on the use of programs;
- Illustrative material;
- Tests on the topic of the lesson for self-checking understanding new material.

Based on the results of work, the Institute received a copyright certificate for the developed digital educational resources in 2012 (Digital Educational Resources (DERs) for Secondary School (A copyright certificate No. 687 dated June 4, 2012).

In the future, work in this direction was continued at the main place of work - at the Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeev, where modern information technologies are actively introduced into the educational process.

The basis of scientific, methodological and informational support for the process of teaching social and humanitarian disciplines can be the electronic educational and methodological complex of the discipline (EEMCD), developed on the basis of pedagogical innovations and information and communication technologies. When writing the article, the authors relied on their own experience in creating electronic and digital resources for readable disciplines.

The authors developed the EEMCD, which was a logically connected system of didactic, software-technological, and organizational components that ensure the effective achievement of the goals of the educational process.

The content of the EEMCD includes not only lecture notes and video lectures (Video lectures lasting from 15 to 20 minutes prepared by the lecturer enabled the student to receive basic, initial information on the upcoming lecture topic), also lecture presentations (studying the topic and mastering the presentation material is a good addition to the text material, since one of the main tasks of the presentation is the visual perception of the material, attracting attention. Voluminous lecture material - on average, the presentation of a lecture of 50-60 slides is an additional opportunity for self-study of the problem), guidelines, recommendations for the implementation of the term papers and topics of seminars, a glossary, questions for the exam, a list of literature (traditional, links to e-books, Internet resources), as well as methods and forms of control, (test tasks for computer testing; electronic control and testing complex, a list of practical tasks, cases, term papers; the list of questions and tasks for the exam, criteria for assessing knowledge and rating). Tests run on a computer over a period help students be flexible in terms of time, helping to reduce the stress.

Observing all the above requirements, EEMCDs were developed in all disciplines of the department, such as the History of Kazakhstan, Philosophy, Module of socio-political knowledge: sociology, political science, cultural studies, psychology, Fundamentals of Ethics and Anti-corruption culture, History and Philosophy of Science, Psychology of Management and Pedagogy in Higher education.

The effective use of this EEMCD became possible thanks to the university information system "Portal", developed by university programmers. The advantage of the "Portal" system was not only in the placement of

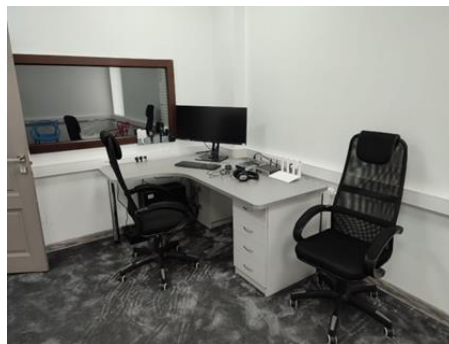
full content - EEMCD by disciplines, but also in the ability to check assignments, all written works and writing comments, i.e., possibility of student feedback.

We would also like to mention the implementation of one of the term papers in the form of a multimedia presentation and the possibility of attaching the work in the portal as a link. For this purpose, the group was divided by three students into several subgroups; each subgroup had to prepare one term paper in the form of a video presentation. We think this form of work contributes to the development of skills such as collective solving of creative problems, public speaking by each student, acquiring teamwork skills, visually present the content of term paper, and student's creative abilities

([https://drive.google.com/drive/folders/1naxtbc\\_gRu\\_fNas0q2DbC\\_GKHT18073k?usp=sharing](https://drive.google.com/drive/folders/1naxtbc_gRu_fNas0q2DbC_GKHT18073k?usp=sharing))

There is no doubt that the implementation of such tasks will have a positive effect on the expansion of the students' worldview. In the course of creative studies, students can visit museums and parks of Almaty city (Military History Museum of the Ministry of Defense of the Republic of Kazakhstan, Baitursynov Home Museum, Almaty Museum of Musical Instruments, Kanysh Satpayev Museum at Satpayev University, 28 Panfilov's Park, etc.), and interview museum employees and develop work skills. Video presentations made by students on various topics: Kazakhstani on the front against fascist aggression, Famine in Kazakhstan in 1930s, its consequences, Traditional worldview and mythology of the Kazakhs in the XV-XVII centuries, Traditional musical and poetic Art of the Kazakhs in the XV-XVII centuries, "Khrushchev Thaw" and Kazakhstan: attempts to reform the political system and economy, etc.

In 2021, to improve work in this area, the university purchased the latest 4K Video Studio | Ultra HD | Full HD.



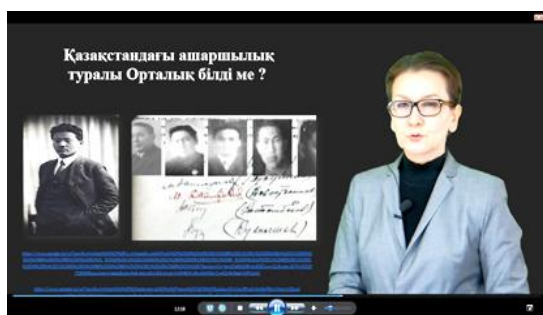
*4K Video Studio | Ultra HD | Full HD*

Thanks to the video studio, the teaching staff of the university managed to record high-quality lectures in the disciplines they read.

In recent years, Massive Open Online Courses (MOOCs) are one of the new online learning trends in the country's higher education. As we know, the term MOOC is known thanks to researchers Dave Cormier from the University of Prince Edward Island and Bryan Alexander from the University of the National Institute for Technology in Liberal Education in response to the Connectivism and Connected Knowledge course, which was conducted by George Siemens and Stephen Downes in 2008, where more than 2300 students took part [11].

In 2014, the National Open Education Platform was established by the leading universities of Kazakhstan to create and promote open learning as a new element that will contribute to the availability and quality of knowledge in the higher education system. In the same year, Al-Farabi Kazakh National University launched a system of massive open online courses on the OpenEdx platform to familiarize professorial and teaching staff, students with the current state of the online education industry, teach how to plan, develop, launch and restart their massive open online courses (MOOCs).

Today, Almaty University of Power Engineering and Telecommunications named after Gumarbek



Daukeev is also actively working on creating its own MOOC. The three lecturers of the Department of Social Disciplines G.Sharakpayeva, A.Mukhambedyarova and S.Baidildina Fellan, have recorded 15 lectures in the disciplines "History of Kazakhstan", "Philosophy", "Module of socio-political knowledge: sociology, political science", in Kazakh and Russian languages for MOOC. The department staff continues recording high-quality video lectures using a 4K | Ultra HD | Full HD video studio

**Lecture recording on the discipline "History of Kazakhstan" for MOOC by Baidildina Fellan S. (2023)**

The natural increase in the Kazakh-speaking audience in the country requires large-scale work towards the development of electronic platforms and content in the Kazakh language.

In recent years, there has been an increase in the share of school graduates who have expressed a desire to pass the Unified National Testing in the Kazakh language. For example, if in 2020 75.1% of the school graduates passed the unified national testing in the Kazakh language, then in 2021 that number rose to 75.5%, and in 2022 to about 76%.

Such a positive development once again confirms that the teaching staff of the country's universities has a lot of work to do to prepare educational and methodological developments, including electronic resources in the state language.

As the Minister of Science and Higher Education S.Nurbek noted, today the national library fund has been replenished with the best world works that have been translated into Kazakh, and the Ministry faces a large-scale task of translating them into electronic format. Also, active work is being carried out in the republic to translate into Kazakh 654 of the best courses of the world educational platform Coursera, which are not available in Kazakhstan [12].

Today, the Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeev is actively digitizing the library, a lot of work is being done to translate paper media into electronic format and the development of digital content by university teachers.

The University library is one of the largest technical libraries in the republic. The establishment of the automated integrated library system "MegaPro" allows employees and students at the University to work efficiently and conveniently with electronic catalogues of bibliographic data and digital content. Access to electronic information resources can be obtained in the electronic reading room "Mediateka".

Also, the availability of the full-text database of "Altyn Bet" provides the AUPET team with an extensive collection of electronic educational and scientific literature.

The organization of the humanitarian reading room named after E.Sypataev, which provides textbooks and teaching materials of the disciplines of the social and humanitarian module motivates the teaching staff of the Department of Social Disciplines to strengthen the work on the development of digital content for the courses of the department.

The teachers of the Department of Social disciplines are also actively working in the development of electronic resources on the disciplines to be read in the Kazakh language.

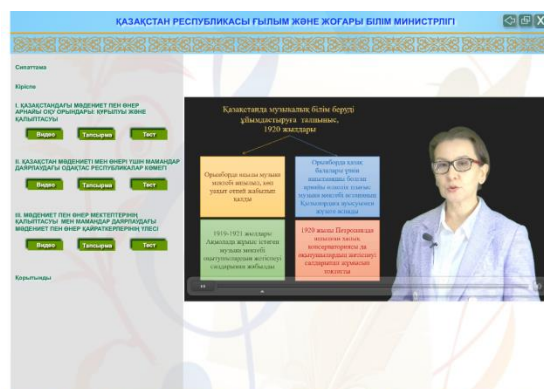
Over the past five years, by means of direct supervision and participation, the authors of the article have prepared three electronic manuals of "Contemporary History of Kazakhstan" (S.Baidildina Fellan, B.Kabdushev, S.Sayfulmalikova, B.Berlibaev), "Module of socio-political knowledge: sociology, political science" (A.Abdykalyk, S.Baidildina Fellan) and "Experience of training personnel of culture and art in Kazakhstan in 1930-1950" (S.Baidildina Fellan) for university students in Kazakh language (A copyright certificate No. 31483 dated November 29, 2022).

In electronic manuals, it was possible to structure diverse material (texts, author's video lectures, assignments, tests, glossaries, presentations, documentaries).

According to the form of presentation of the material, digital educational developments combine elements of different models. They implement not only the informational function of learning, but also problematic ones, that is, they are aimed at developing students' logical thinking. These electronic publications were developed by means of using programming tools.

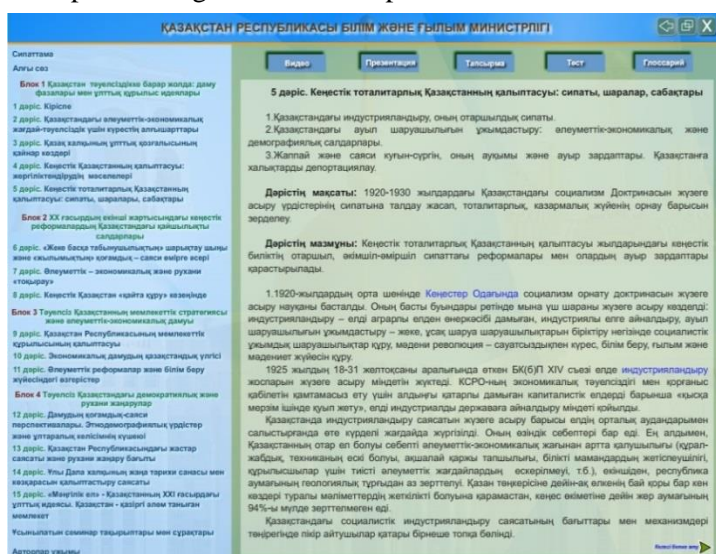
For example, the electronic manual of "Contemporary History of Kazakhstan" has been prepared on the basis of the curriculum approved by the Ministry of Education and Science of the Republic of Kazakhstan

The educational tool includes a professional categorical apparatus and test materials that have begun to circulate in the modern education system. This electronic resource will create conditions for the formation of



**An electronic manual of " Experience of training personnel of culture and art in Kazakhstan in 1930-1950" by Baidildina Fellan S. (2022)**

certain skills and competencies among students. By clicking on the words highlighted in blue, found in the texts, the student can get acquainted with the life and activity of individual historical figures, the history of various socio-political organizations and specific historical events from the open encyclopedia.



An electronic manual of Contemporary History of Kazakhstan (2017) by B.Berlibaev, B.Kabdushev, S.Sayfulmalikova, S.Baidildina Fellan

disks, hard disks, etc.) and on network databases.

In our opinion, the use of digital educational resources, the combination of elements of different models in them will help to improve the quality of students' education, increase motivation to study, increase cognitive activity in the basics of social sciences and humanities. The use of digital educational resources is also beneficial for teachers. They can use the capabilities of modern information technologies, work with information techniques and effectively use them in the educational process.

In 2019, the university began training teaching staff on the use of distance learning technologies in the educational process. With the beginning of the Covid-19 pandemic situation, teaching staff of the social disciplines department began to actively study modern innovative technologies, which took place in an online format in Almaty. Among them the following training courses can be distinguished: The use of distance educational technologies (DET) in the educational process, Modern technologies for teaching social disciplines, Competence-based approach and innovative technologies in the education system, modern technologies for teaching social disciplines (history, cultural studies, philosophy, political science, sociology), Modern media and information space, etc.

Currently, the faculty of the department is working on electronic aids for the courses Module of socio-political knowledge: sociology, political science, and History of Kazakhstan.

In order to create professional content on the discipline "History of Kazakhstan", lecturers-historians of the Department of Social disciplines plan to develop an electronic research resource (ERR) in the history of Kazakhstan for the 1st year undergraduate students of AUPET.

ERR will allow using a large layer of various sources for the organization of research work of university students. The educational content will be arranged in accordance with the topics of the standard program of the discipline "History of Kazakhstan" in the amount of 5 credits. This educational resource will contain a database of historical nature: video lectures with lecturers of the department, a wide range of various tasks, tests, maps, documentary photographs, drawings, tables, diagrams, glossary, Internet sites and portals on the problems of the history of Kazakhstan and world history and a bibliographic guide to the literature of History. These portals and websites will help guide the search and cognitive activity of students. For example, Digital National Security Archive [nsarchiv@gwu.edu](mailto:nsarchiv@gwu.edu) (New Digital National Security Archive Document Collection Spotlights Soviet-U.S., their relations at Cold War's End, about Nuclear policy of the countries); [Голод в СССР. 1930 - 1934 гг. - Архивы](#) [www.rusarchives.ru/publication/hunger\\_ussr/content.shtml](http://www.rusarchives.ru/publication/hunger_ussr/content.shtml); (Russian e-archive documents on famine in the USSR, facts on homeless children and internal and external migration including Kazakhstan) <http://www.ncai.kz> (automated information system "Electronic Archive", containing documents identified within the framework of the State Program "Cultural Heritage" from archives and scientific institutions off foreign countries); <http://libguides.wits.ac.za/OERS4Humanities> Open Educational Resources for the Humanities & Social Sciences; <https://e-history.kz/> (It covers the history of

Glossaries are provided separately for each topic. In addition, the student can perform various cognitive tasks and tests in the same educational resource to confirm and supplement the knowledge gained during the lecture. The ability to perform tests in the e-book itself allows students to quickly complete control tests and save time. Another advantage of electronic resources is that the student can replenish his theoretical knowledge based on documentaries. These are authentic films shot by order of the Ministry of Education and Science and the Ministry of Culture and Information of the Republic of Kazakhstan with the participation of well-known researchers, historians, witnesses of certain events. The electronic manuals developed by teaching staff can be placed both on local portable media (CD

the country from ancient times to modern times), <https://100kitap.kz/> (100 best textbooks of the world in the Kazakh language in all social sciences and humanities), <http://www.elibrary.kz/>, and many others.

**Conclusion.** Today, the development of distance learning in the world and the republic requires intensification of work in the development of educational bases using digital technologies, which undoubtedly affects the intensification and improvement of the learning process, strengthening the motivation for educational activities.

The results of study indicate that the content of electronic resources is diverse: various types of assignments, materials (notes, video lectures, presentations, glossary, tests, various academic tasks, documentaries, podcasts, literature, Websites and portals) that students can use at their convenience. Tests conducted on a computer for a certain period help students to be flexible about time, which helps to reduce the burden on them. Also, students can repeatedly perform the same set of tests in the electronic resource itself and review the materials.

Electronic resources are very important elements of modern education and require the investment of certain funds, permanent updating of their content, thus making them more popular for the consumer.

Structuring diverse materials (texts, author's video lectures, assignments, tests, glossary, presentations, photographs, documentaries) in one educational electronic resource will help to maximize the number of potential users of digital study resources and will lead to a wide demand for electronic development.

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