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Importance of internet resources in the biological education system

The article considers the possible use of Internet resources in the field of education, both in schools and in higher education. The importance of development of educational sites, scientific bases with open and free access to necessary literature and articles is considered. The important issue is that the introduction of websites should be smooth and understandable, without displacing paper carriers, which will be important and correct combination of both. Also, training with the help of the Internet gives tangible advantages in this area. Various educational sites provide many opportunities: from searching terminology, articles and books, to distance learning on the platforms of famous universities, using electronic libraries, the opportunity to communicate with world-famous lecturers, scientists, naturalists. In the article, we will look at each of the above possibilities on examples of Russian-language sites and not only, we will tell about their influence on the educational process, as an example, we will mention Karaganda State University. Let's draw conclusions about whether innovation is really so important in the form of e-courses, online libraries, remote lectures and the creation of global open-source articles for educational institutions.

Keywords: universities, Internet, Internet resources, website, educational system, value of sites, educational process, distance learning, KSU, online training, educational sites.

The relevance of the topic is related to the fact that, in the 21st century, the world of innovative technologies, the main and integral part is the absolute availability of the necessary information and the computerization of any educational process. As a result, teaching materials, articles and much more are placed on the worldwide web and are presented through websites.

The purpose of the article is to consider the importance of using various scientific Internet resources for educational purposes.

A website is a collection of documents of a private person or organization united under the same address (domain name). Web pages (hypertext documents) is a text that contains special commands called tags. Tags allow you to create page elements, graphic objects, texts, hyperlinks, etc. By default, it means that the site is located on the Internet, but it can also be published on the local network of the company — on the Internet. Websites are otherwise referred to as the Internet representation of a person or organization. When they say «their own page on the Internet», it means a whole web site or a personal page as part of someone else's site. Usually, the Internet is used as a means of searching for learning and entertainment information, or as a means of communication (e-mail, ICQ, etc.), but it is also a means of making profit [1, 2].

The Internet is increasingly entering the various spheres of our lives. Almost every person with varying frequency resorts to his services, because the World Wide Web has such undeniable advantages as accessibility, efficiency and informative. Therefore, in order to conduct successful training and to familiarize people with various spheres of human activity, taking into account the current trends, many scientific researchers create their own websites on the Internet: about living things, chemical reactions, online courses, libraries, and so on [3].

In recent decades, the scientific community is actively developing the resources of the global Internet. Scientific and educational institutions, libraries and other organizations position themselves in the World Wide Web [4].

From the point of view of education, this is a fairly effective way to bring information to the students at the present time. The Internet has become a part of the life of a man of the twenty-first century, people from different countries and continents communicate with him, a lot of information is downloaded, thanks to him they save lives, launching a cry for help [5, 6].

The advantages of using the Internet in the educational sphere are most noticeable. Now it's much easier to get up-to-date and reliable information on any topic of interest. Students no longer need to buy or order the necessary literature. During the training they are given the opportunity to use Internet resources anywhere in the world.

The emergence of the global Internet has brought a lot of useful to society. One of the innovations is the blurring of borders between cities, countries, continents. You can find out about conferences, meetings, con-

tact the right person, wherever he is, or to study remotely and get a distance diploma. Learning foreign languages in this situation becomes a simple and effective process. In addition, Internet training can significantly save money, which is very important for the student [7].

The use of online libraries opens up huge access to the literature, thanks to this you can access even a fairly rare book.

But the main advantage is saving time, you do not have to go to libraries and look for books, and if you find the right data source, you have to sit for hours and look for specific information. It is enough to use the system of search engines and will immediately provide a lot of links to any query you are interested in [8, 9].

The site can be a good support for teachers for drawing up plans for conducting lessons, students can learn a lesson with the use of innovative technologies, and free access to information will allow for independent research and self-education outside the walls of educational institutions. Especially for lack of necessary books, a site on the necessary topic can become the only source of data, the only and the right way to bring the necessary information to the masses [10].

Many countries have long placed great emphasis on educational sites, online libraries, remote conferences, articles that are freely posted on the Internet to specialized sites. In Kazakhstan, interest in developing sites of this kind is only beginning to grow, it will be difficult for a beginning researcher or a simple person to find worthy information in the public domain, most often users will look to foreign websites.

Currently, the popularity of online resources is gaining courses that provide various opportunities to receive distance education from eminent scientists or leading universities in the world. The wide spread of such sites is a normal phenomenon of the present time, especially if we take into account the time deficit of modern man, then this method of training is very convenient [11].

Teaching itself is the interaction of the teacher with the learner with the help of learning tools. Modern computer facilities, information technologies lead to the fact that it is allowed to entrust some of the functions of the teacher and some of the functions of the learner to the means of instruction accepted in the classical form. The introduced information technologies of online learning play the role of tools that:

1. Students are given the opportunity to use the educational material, a large amount of reference information, in an additional, accompanying form, and all in remote use mode;

2. Students also receive online communication with a tutor (teacher); The big advantage is the possibility of conducting classes at a great distance, this technology is used in different parts of the world for people who for one reason or another can not attend schools, colleges, universities; More often this way, conferences, seminars, lectures and even laboratory work are conducted and much more.

3. There is control over the correctness of the execution of tasks, because it is not so important that the student understands the material, for this there is the opportunity to review the data given, a certain topic that, with the help of modern technologies, will be analyzed as simply and clearly as possible. In such cases, the presence of an online tutor is very much necessary, any question of interest to a particular topic can be accessed; The online tutor also monitors the student, as he goes through the course, at the time of testing, laboratory work, examinations, and at the end of the issue of a certificate or diploma confirming the passage of a course.

4. It is possible to develop online simulators, create materials containing video, images, animations for maximum visualization of data, audio recordings that are more often used in language learning, all collectively called «multimedia»;

The most important element in building a learning process using modern Internet technologies is to provide access to educational content from any part of the world. Among them are those that are widely spread, they can include: virtual schools, distance courses, etc. [12].

Virtual school is an educational Internet institution in which the interaction of teachers and students is carried out via the Internet. The materials of the training courses in virtual schools are presented in electronic form and posted on the web resources in such a way that registered students can use them in full. Such materials usually contain texts and lectures on the subject, interactive tests and online simulators, dictionaries, translators, etc. A student familiar with the materials of the virtual lesson is allowed to perform a number of tasks and tests that are automatically checked by the system or online tutor, with further evaluation. Also the student can communicate with network teachers, consulting in subjects, passing exams. Online tutors usually also exercise control over the course and expose the knowledge of students, communicating with them through various ways, for example: by email or phone, on the forum or in the personal account of the authorized person. Examination control passes through the entire course and is usually carried out in the form of full-time or part-time assignments [12].

The distance course is a special technology using modern information technologies. The distance course is the main element in building learning using distance learning technologies.

The following forms of classes are distinguished on the Internet:

An online seminar is a type of internet conference, that is, it is a way to hold meetings online via the Internet. During the web conference, each of the participants can be anywhere, and communication is carried out through computers, tablets and other gadgets. This requires a connection to the Internet, a web camera, pre-prepared applications, if any.

Chat lessons — classes conducted using chat technologies. Chat — classes are held synchronously, that is, all participants have simultaneous access to the chat. Within the framework of many distance learning institutions, there is a chat school, in which the interaction of teachers and students is organized with the help of chat rooms.

Web-lessons — remote lessons, conferences, seminars, business games, laboratory works, workshops and other forms of training sessions conducted with the help of telecommunications and other opportunities of the World Wide Web. Web — based training uses specialized educational web forums — a form of users' work on a particular topic or problem with the help of records left on one of the sites with the corresponding program installed on it.

From chat sessions, web forums are characterized by the possibility of longer (multi-day) work and the asynchronous nature of interaction between students and teachers.

Teleconferences — usually held on the basis of mailing lists using e-mail. Educational teleconferences are characterized by achievement of educational tasks. Also there are forms of distance learning, in which educational materials are sent by mail to the regions.

Of course, the online learning system is also not ideal. First, there are difficulties in determining the personality of the student. That is, while it is impossible to verify accurately, our examiner passes the exam or someone for him. But as a solution to this problem, some higher education institutions of distance education introduce mandatory primary sessions. Secondly, it happens that the quality of the Internet is not enough to establish an uninterrupted connection between the student and the teacher. Thirdly, distance learning courses contribute to the fact that direct contact between the trainee and the teacher is lost [13].

Online training is great for those who live in remote areas, as well as for those who for certain reasons cannot attend full-time education. In addition, the undoubted advantage of distance learning courses via the Internet is that the learner can choose at what time of day it is more convenient for him to deal with, and also determine for himself the individual duration of studies.

The student of distance learning does not have a hard schedule, and all nuances can always be solved most quickly using e-mail, Skype or ICQ. In addition, there is an opportunity to talk with the teacher on-line and ask all the questions of interest on this or that subject. When going through education, distance education does not need to worry about the fact that any assessments will be delivered «with passion».

An example is the list of electronic platforms that the Karaganda State University includes in the working curriculum of studying undergraduates and doctoral students of their institution. These platforms are mass open online courses [14, 15].

Massive open online courses, MOOC — a training course on a specialized platform with mass interactive participation, the use of e-learning technologies and open access through the Internet. As additions to the traditional materials of the training course, such as video, reading and homework, mass open online courses provide an opportunity to use interactive user forums that help create and maintain communities of learners, teachers and assistants. MOOK provides an opportunity to study absolutely any subject or discipline at a convenient time and at a comfortable pace, receive a certificate of completion of the course (fee-based service), and pass specialization, i.e. A special program, which includes several courses and the defense of the thesis project. After passing the specialization, the student receives a certificate of completion of each course and a certificate of completion of the entire specialization.

MOOK courses are provided on the platforms by the world's leading higher education institutions, such as Stanford, Harvard, MIT, Johns Hopkins University and others.

Since 2016–2017 academic year in the KSU Academician E.A. Buketov MOOK are included in the working curriculum of all masters specialties in the section of profiling elective disciplines. The following online platforms can be used for registration at the MOOC:

– Coursera — www.coursera.org;

– Edx — www.edx.org;

– Udacity — www.udacity.com;

− Khan Academy — www.khanacademy.org;
− Iversity — www.iversity.org;
− Canvas — www.canvas.net;
− Udemy — www.udemy.com;
− Fun — www.france-universite-numerique-mooc.fr.

Training through online courses is carried out as follows:

1. Registration takes place on one of the selected platforms, the student fills in all the required fields for this. The menu of the online data portal allows you to choose courses in the specialty areas, language of instruction, language of subtitles.

2. After selecting the subject, the topic of training and establishing the language at which the training process will take place, the terms of training are determined. On one site, strict deadlines for passing lectures, video lessons and examinations can be established, otherwise the dates of the beginning and the end of the course are given, and the student himself can choose the time of work on the material.

3. When the course is completely finished, the exam will be given to the trainee on the passed material and after passing the testing gets a certificate about the passage of one or another course and topic.

This is one of the tools used in the field of education due to which it is possible to study any topic in the field of interest, which will be confirmed by the assessment received from leading teachers and scientists of the world universities, plus a certificate that can be attached to a diploma or can be a serious support for employment [16].

Similarly, in the field of biology, sites are gaining popularity — determinants that provide information on one or another species of living creatures or plants in a particular region. As an example, consider a site with a domain name:

− Butterflies of Central Kazakhstan — www.butterflies.kz.

The site is a resource containing information on Lepidoptera in Kazakhstan and is the first information resource in this country on this topic. The web resource has information about species listed in the Red Book of Kazakhstan, about pests that damage gardens and gardening. Among the pests are: *Thymelicus lineola* O. (*Adopaea*)), (*Aporia crataegi* L.), Cabbage (*Pieris brassicae* L.), Pepper (*Pieris rapae* L.), Puffin (*Pieris napi* L.). It should be noted that in the territory of the Karaganda region these pests in the observed amount of harm do not represent.

To the rare, lepidopterous species that are found on the developed site and found in the observation areas: Sailfish — Papaio Machaon and Apollo (*Parnassius apollo* L.); For Karaganda, there was a rare Traumont (*Nymphalis antiopa* L. (*Vanessa*)), and Podaliria (*Iphiclides podalirius*).

Among the species that adorn nature found in the region's research areas, in addition to the rare species listed, are: Admiral (*Vanessa atalanta* L. (*Pyrameis*), Breezeida (*Satyrus briseis* L.), Dryad (*Satyrus druas* Sc.), Peacock Eye (*Nymphalis io* L. (*Vanessa*)), Pearlescent large forest (*Argynnis paphia* L.), Chervonets unpaired (*Heodes dispar rutilus Wern.* (*Cupido*)), Chervonets fiery (*Heodes virgaureae* L. (*Chrysophanus*) and many other our butterflies.

The site for Lepidoptera of the Karaganda region was created with the purpose of using information of the resource for the process of teaching biology in educational institutions; Elimination of gaps in the knowledge of the fauna of the native land; Involving people in the protection and regeneration of species; Development of a sense of beauty and pride in the wealth of the country.

This resource is a remote determinant for novice researchers and not only that is freely available and can be used in specialized schools, colleges and higher education institutions with the study of biology. Used in the educational sphere as an innovative technology in the study of the subject, zoology of invertebrates, lepidopterology and so on.

Another example is the site www.acbk.kz this resource provides information on biological, ecological and many other events occurring in different territories of the Republic of Kazakhstan and far beyond its borders.

This site provides verified information from experts conducting research on current topics, vulnerabilities of nature. Information on activities of the Kazakhstan Biodiversity Conservation Association employees is posted on it, where and what project is being conducted, a set of volunteers is being trained and subsequently taught various methods of studying wildlife. Also, it is very important to attract students from universities that foreign specialists work with, share their experience, and learn how to handle the latest technology. For young people, this opportunity is a unique chance to gain new knowledge and skills, to get acquainted with scientists

in the field under investigation, and in the future will be able to work on a profile. Information on the site is always up-to-date and timely, besides, in addition to a separate site, employees of this organization conduct pages in various social networks, in order to attract a large number of young people.

Another site that is now very relevant for students. Although this resource is very young, but already very popular among young people, who are fond of science, as well as among scientists already known in the world of science and not only.

– Skyhab — http: www.sci-hub.

The developer of the site is fighting for the free and mass dissemination of scientific knowledge in the society. The goal of the project is to remove all barriers to scientific knowledge.

The Sci-Hub project provides free access to scientific literature. Now the distribution of this literature on the Internet is artificially restricted by copyright laws designed to protect «intellectual property». We stand for the abolition of property; Communism is one of the main components of a scientific ethos.

Now in the library of the project at sci-hub.cc in open access is placed more than 58 million peer-reviewed scientific articles available for free download.

Skye hub is the first pirate Internet resource that opens public and mass access to a variety of scientific articles.

This resource promotes the following ideas:

1. Knowledge — to all. The developers say the following: «We are fighting against information inequality around the world. Scientific knowledge should become available to all people regardless of their financial situation, social status, country of residence and other factors. The mission of the project is to eliminate absolutely all barriers preventing the widest possible dissemination of knowledge in modern society».

2. Defeat the copyright. We advocate the immediate abolition of intellectual property and copyright for scientific and educational information. Laws on copyright make legally illegal work of electronic libraries and block access to knowledge for most people, while allowing individuals to extract huge profits from this situation, creating and supporting not only information but also economic inequality.

3. Open access. The Sci-Hub project supports the Open Access movement in science. Scientific articles should be published in an open — that is, free for reading — access. Open access is a new and progressive model of scientific communication, behind which is the future. We oppose the earnings received by restricting access to information.

The project is very relevant, because users are disseminating information about this resource very quickly. The number of people who open this site for their use is growing steadily.

For students, this project is a valuable finding, thanks to which students can easily access the articles of various fields of activity. Take the information you need for yourself, get new knowledge and so on.

Conclusions

The website (from the English website: web, and site is a place) is a collection of electronic documents (web pages) linked together by hyperlinks and located in a dedicated place on the Internet (on a web server). Each site has its own owner (private or organization) and its unique URL address (domain name).

Today it is difficult to give a clear definition of the term «website», as some sections of large web resources can position themselves as separate stand-alone sites, and there are sites that contain only one web page («one-page»).

The field of education has always required the application of the best methods and methods of delivering the necessary information to the students, over time these methods have changed and have been effective each in its own time.

In the twenty-first century, this method was the use of Internet resources as a method of innovative technologies. Universities and institutes are increasingly beginning to apply distance learning, or to introduce work using the sites of keyers, library sites and so on. School establishments also actively use learning sites.

Although it is too early to talk about a complete transition to electronic resources, as there is little information on the Internet, which you can use without fear of mistakes or false data. A well-developed methodology for implementing various educational sites in universities, institutes, colleges and schools will allow receiving information from different corners of the world, establishing connections through the World Wide Web and getting education at a distance.

Perhaps soon the use of websites will become normal practice and, perhaps, future education will be built entirely on the use of innovative online technologies, but now these are only attempts that are not always successful.

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И.В. Григорьева, В.С. Абукенова, В.В. Гилль

Білім беру жүйесіндегі сайттар мәні

Мақалада мектеп және жоо-да білім беру саласында интернет-ресурстарды қолдану қажеттігі туралы айтылған. Сондай-ақ керек әдебиет пен мақалаларды пайдалану мүмкіндігін беретін ашық және еркін ғылыми базалар, білім сайттарын дайындау мәселелері қарастырылған. Алайда білім саласына сайттарды енгізу түсінікті және өрескел болмауы тиіс, қағаздағы ақпарат электронды нұсқалармен оңтайлы түрде түйісуі қажет. Интернетті пайдалану, сөзсіз, бұл салада көп басылымдыққа ие: терминдерді, кітап, мақалаларды іздеуі; белгілі университеттерде қашықтықтан білім алу; әлемге танымал ғалымдар, дәріс оқушылармен қарым-қатынас орнату. Мақалада орыстілді сайттар негізінде Қарағанды мемлекеттік университетте жүзеге асу мысалында интернет-ресурстарды қолдану көрсетілген. Электронды курстар, онлайн-кітапханалар, қашықтықтан дәріс оқу және білім мекемелеріне жаһандық ашық мәлімет базасын құру туралы қорытындылар жасалған.

Кілт сөздер: университеттер, интернет, интернет-ресурстар, сайт, білім жүйесі, сайттар мәні, оқу үрдісі, қашықтан оқыту, ҚарМУ, онлайн-оқу, білім сайттары.

И.В. Григорьева, В.С. Абукенова, В.В. Гилль

Значение сайтов в системе образования

Статья рассматривает вопрос о возможной необходимости применения интернет-ресурсов в сфере обучения как школ, так и высших учебных заведений. Рассматривается важность разработок образовательных сайтов, научных баз с открытым и свободным доступом к необходимой литературе и статьям. Затрагивается важный вопрос о том, что внедрение сайтов должно быть плавным и понят-

ным, без вытеснения бумажных носителей, будет являться важным и правильным совмещение тех и других. Также обучение при помощи интернета дает ощутимые преимущества в данной сфере. Различные образовательные сайты предоставляют множество возможностей: поиск терминологии, статей и книг; дистанционное обучение на платформах известных университетов; пользование электронными библиотеками; возможность общения со всемирно известными лекторами, учеными, натуралистами. В статье рассмотрена каждая из приведенных возможностей на примерах русскоязычных сайтов, показано их влияние на образовательный процесс на примере Карагандинского государственного университета. Сделаны выводы о важности нововведений в виде электронных курсов, онлайн-библиотек, дистанционных лекций и создания глобальных открытых баз статей для образовательных учреждений.

Ключевые слова: вузы, интернет, интернет-ресурсы, сайт, образовательная система, значение сайтов, учебный процесс, дистанционное обучение, КарГУ, онлайн-обучение, образовательные сайты.

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