

RESEARCH AND PRACTISE IN THE TRAINING OF STUDENTS FOR SERVER SOFTWARE INTEGRATION: A CASE STUDY IN UZBEKISTAN

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Abstract. The article discusses the domain and hosting algorithm for creating web-sites in the e-learning environment in the training of future computer science teachers. In the process of teaching the subject of pedagogical software it is important to inform the students about the integration of the servers along with horizontal and vertical directions.

Keywords: integration, hosting, domain, domain hierarchy, subdomain, server, server location, virtual server, rental server, server integration, online training.

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1 Introduction

Decree of the President of the Republic of Uzbekistan PF – 5847 dated October 8, 2019, "Concept of development of the higher education system until 2030" emphasis should be placed on the effective use of e-learning environments in the educational process, based on the implementation of "cloud technologies", "blended learning", "feedback".

As stated in the Resolution of the President of the Republic of Uzbekistan dated February 27, 2020 PQ – 4623 "On measures to further develop the field of pedagogical education", Introduction of a continuous system of travel, improvement of curricula and programs in the field of pedagogical education on the basis of advanced foreign experience, creation and implementation of innovative teaching, educational resources, modern, highly cultured, committed to their profession, love of their subject, tireless teaching their subject has made it an important task to form a generation of hard-working, dedicated educators.

From the diversity of knowledge we can see the diversity of integration processes. The includes the coordination of legislative activities with strategic interests in political integration, kinship in social integration, division of labor, etc., industrial integration in production, transport, energy, etc., free trade in economic integration, customs union, tariffs, labor market, investment in financial integration, market capital, wealth, language field in cultural integration, cultural relations, etc., and in scientific and educational integration, the integration of

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pedagogical and information technologies, pedagogical and technical knowledge.

Sarkar et al. (2001) point out that it is difficult to motivate students to learn the concepts of computer networks. Many students consider the subject to be technical, dry and boring, and to overcome this problem, it is necessary to prepare practical, laboratory materials.

According to Kılıç and Çakiroğlu (2022) assess the development of their pedagogical knowledge using assessment tools created by integrating robotics and computer technology in schools and show that their sufficient and advanced level of knowledge was positively improved as a result of the study.

Karabin et al. (2024) show in their survey of students that the virtual learning environment has a significant impact on the activity component of professional competence, and students are encouraged to use the virtual learning environment to improve their knowledge.

Blackhurst et al. (1998) describe in their research that the World Wide Web has significant potential for implementing distance education programs. A new genre of computer programs is being developed to facilitate learning management and communication between students and instructors who participate in Internet-based instruction. One of such programs is the educational server software package TopClass.

Carlos et al. (2010) show how to use the information technology in the educational process for teachers and students, the need to create a web portal for lectures on electronics courses and analyze computer programs for creating a portal.

In Kayumova (2022) the methodology of training future informatics teachers based on an integrative approach in the electronic learning environment has been improved.

In order to expand and deepen our scientific knowledge in the process of preparing a future computer science teacher as a qualified and professionally qualified teacher, the theoretical and practical aspects of the existence of computer program integration are considered.

2 Methods

The research used scientific and methodological literature on the subject, comparative study and analysis of sites providing server services in our country and around the world, socio-pedagogical methods (conversation, question-answer, observation, abstraction, formalization, diagnosis, generalization) with students in this area.

3 Results and discussions

The rapid development of information and communication technologies means that the ability to exchange information around the world is growing, with the integration of servers, which is the process that needs to be taught to future computer science teachers (Carlos et al., 2010).

When preparing computer science teachers to integrate pedagogical and information technologies, training them to integrate computer programs contributes to improving the methodological system of teacher training (Kayumova, 2022).

The process of understanding the integration of servers in creating an e-learning environment that facilitates the exchange of educational information around the world for students preparing to become future computer science teachers in higher education.

In the process of research, comparative study and analysis of scientific, methodological literature, sites providing server services in our country and around the world, the use of socio-pedagogical methods (conversation, question-answer, observation, abstraction, formalization, diagnosis, generalization) with students in this area.

The process of creating an e-learning environment in the educational process also involves the creation and use of e-learning resources - in a static state and the use of a distance learning system in a dynamic state.

The arrival of the COVID-19 pandemic in our country is an emergency for teachers and students, which has led to a change in education from the traditional to the remote, online version. This, in turn, has highlighted the need to create and use an e-learning environment.

Prospective computer science teachers differ from other science teachers in their broad knowledge of information and communication technologies and tools. Today, it is time to create an e-learning environment and have a domain and hosting from special servers for use in distance learning.

Domain means the address or “name” of this site on the Internet. Students should not confuse domain and site too often. A site is a web page that is displayed on the Internet, that is, its content, while the domain of the site means its specific “address”. If our site does not have a domain, users will not be able to find their way and will not see the content.

Domains can be structured hierarchically: they consist of parts or levels, tertiary domains are created on the basis of secondary domains, and secondary domains are created on the basis of primary domains.

For example, let’s analyze the domain name “shilqi.qarshidu.uz”. This domain name consists of: .uz-high-level (first) domain zone. Domains at this level will be geographic and thematic. For example, .uz – Uzbekistan, .ru – Russia, .eu –European Union, .ua – Ukraine, .uk – Great Britain, .fr – France and so on.

The secondary domain is the domain name we chose during registration, i.e. the word “against” in our example. Keep in mind that a domain name must be unique, we cannot register two domains with the same name.

The third level is also called the domain-subdomain, i.e. the word “external” in our example. If we own a domain name, you can create an unlimited number of sub-domains. There are also primary domains related to the field of activity, for example, .som – commerce, .biz – business and now used by private education, individuals, non-profit and semi-commercial organizations, .gov – for US government agencies, .edu – education. intended for institutions, etc.

Hosting is the physical location of our site, a place separated from the server. It is impossible to create a site that creates an e-learning environment without a domain and hosting.

There are several hosting and domain service companies in Uzbekistan, such as Billur COM (<https://billur.com>), aHost (<http://ahost.uz>), Airnet (<https://airnet.uz/>) and others. We can learn about their services at <https://www.hosting-obzor.uz/>.

When we analyzed hosting and domain service companies, we found that they had services such as virtual server, server space, rental server, and we clarify these concepts.

A server is a computer with relatively high computing capabilities designed to respond to requests from client computers, store data on the network, transmit it to other points on the network, and its main service is to connect users to the Internet.

A virtual server is a virtual object created in special software that can be hosted on any physical server and has the same features as a normal physical server.

On one technical site we can run several virtual servers at the same time with their own configuration, separate management. Every user using a virtual server should know exactly the virtual server processor capacity and the amount of RAM allocated, the specified amount of system resources to be placed on the virtual server.

Restrictions apply only to allocated system resources. The tenant who owns the hosting and the domain manages the databases, sites, and the number of users who access them.

Server Location is a server hosting service that is a type of service where our network or server equipment can be located in a data center. In addition to the host, domain service, the company also provides server allocation services.

A rental server is a type of service that is performed by transferring certain powers to a physical server, i.e. a computer. The service is configured according to the tasks of the project, in particular it involves the placement of large amounts of virtual servers or sites that require significant processor resources. It could be an online store, a conference, or a traffic.

We voluntarily choose one of the hosting service companies listed above and present the registration algorithm. For example, we aHost. we chose uz. In the window that opens, we present a sequential registration algorithm.

1. aHost. To register from uz, enter it in the address field of the Internet and press Enter;
2. In the window that opens, select “Register” and enter the domain name that the user likes (we selected kayumova.uz).
3. Go to “Settings” and select the duration of service of the domain and its cost.
4. Click “Next”, then browse the “View and Pay” window and click “Oformit” to pay;
5. In the “Oformit” window, the personal data of the domain recipient is entered and documented and sent to the company manager.
6. As soon as the manager of the company draws up a “contract”, the payment is made by selecting a type of payment (Payme, Click, etc.) from “Choose sposob oplata”. We will receive a message within a day that we have the domain.

We have our own domain, now we need to get hosting. Domain and hosting can be obtained from different companies and different countries. This takes into account their capabilities: offering a large volume of space, offering high speed, and so on.

We choose another optional hosting site. For example, Freehosting.com. This site is a German site and we will register it as in the previous algorithm. Given its capabilities, we choose the option of getting free hosting from Freehosting Free! - and register and get hosting using the above algorithm.

The main process is aHost. We need to show that the kayumova.uz domain from uz will be implemented in the integration of hosting from FreeHosting.com. Bunda

The Choose a Domain-Domain Select window allows users to select three types of domains.

1. “Register a new domain” - registration of a new domain;
2. Transfer your domain from another registrar-registration from other registrars;
3. I will use my existing domain and update my nameservers. The user selects any of these three items. We have aHost. There is a domain kayumova.uz from uz, so we select the third item and enter our domain (Figure 1).

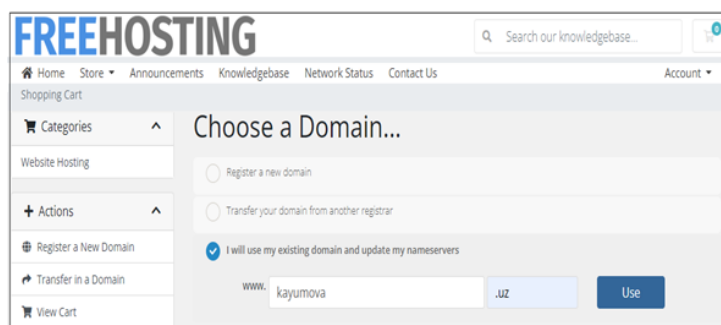


Figure 1: The domain input window from aHost.uz.

Here Freehosting.com hosting knew which domain (kayumova.uz) to work with, now, aHost. Now aHost the location code (ns1.freehosting.com and ns2.freehosting.com) allocated from the server to the host provided by Freehosting.com so that the uz hosting knows which domain to

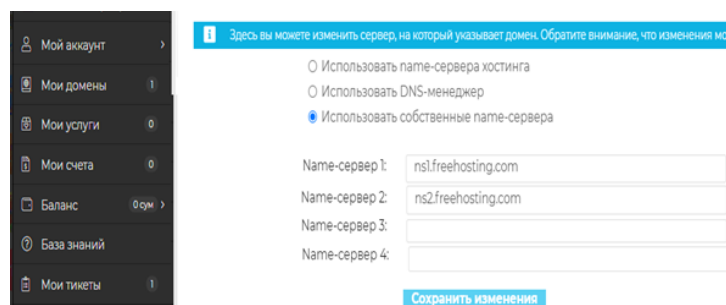


Figure 2: The aHost.uz window for entering server names from Freehosting.com.

work with. In the domain window taken from the site, enter the server in the space provided for hosting and click “Save Change” (Figure 2).

In this case, aHost.uz supports the operation of Freehosting.com with its own domain, and conversely, Freehosting.com supports the operation of aHost.uz with its own hosting. This is where the integration of hosting on aHost.uz server in Uzbekistan with hosting on Freehosting.com server in Germany is shown. Server integration knows no boundaries around the world. The user will be able to host from any country, have a domain from any country and use them integrated as we mentioned above.

4 Conclusion

In the paper interdisciplinary integration, integration of pedagogical methods and information technologies as well as integration of pedagogical and technical knowledge are considered. In the process of teaching the subject “Pedagogical software” we experimented with the creating the online educational web-pages using server integration and also off-line e-learning tool. The results obtained at each stage of the experimental work were systematically analyzed. In the experimental group of 215 students, in the control group of 220 students were included to the research. In determining the effectiveness of the research, the level of students’ mastery of the task was studied on the basis of the corresponding criteria, and the criteria χ^2 was used (Table 1).

More efficient step was the creation of the online learning site using server integration, which showed that its efficiency (1.16 %). This leads to a further expansion of the ideas of the teaching process based on an integrated approach in pedagogy.

Explaining server integration in the process of training the future computer science teachers leads to the following cognitive concepts:

1. The user must have his/her own domain and host to create an e-learning environment;
2. Creating a site that can be used in the educational process, if you have your own hosting and domain;
3. Servers anywhere in the world can serve with their own domain and hosting;
4. Importance of learning the integration of the services, domains and hosting of servers located anywhere in the world.

Table 1. Test results obtained at the beginning of the experiment students who took part in the pedagogical experiment.

University	Group	Qty. students	fine		Well		satisfactorily		not satisfactory	
			5	%	4	%	3	%	2	%
Karshi State University	experimental group	59	5	8,5%	16	27,1%	31	52,5%	7	11,9%
	control group	60	6	10,0%	17	28,3%	28	46,7%	9	15,0%
Ferghana State University	experimental group	78	7	9,0%	18	23,1%	41	52,6%	12	15,4%
	control group	79	8	10,1%	19	24,1%	38	48,1%	14	17,7%
Gulistan State University	experimental group	78	8	10,3%	19	24,4%	38	48,7%	13	16,7%
	control group	81	8	9,9%	18	22,2%	43	53,1%	12	14,8%
Total	experimental group	215	20	9,3%	53	24,7%	110	51,2%	32	14,9%
	control group	220	22	10,0%	54	24,5%	109	49,5%	35	15,9%

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