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FORMATION OF PROFESSIONAL COMPETENCE OF FUTURE IT SPECIALISTS IN INSTITUTIONS OF HIGHER EDUCATION

The paper considers modern information technologies, which are the basis of the process of informatization of education. The process of improving the quality of training specialists in the context of developing a system of general and vocational education is researched. The author analyzes the definition of informational educational environment. It is substantiated that online education is a factor in increasing the level of access to education and has certain advantages over traditional types of knowledge, providing flexibility through remote access to resources. Modern European educational initiatives are analyzed, informatization of education envisages development of informational and educational environment, essential role in creation of which is educational television. It is determined that today in the field of development of the information and telecommunication environment the main channels of data transmission, owned both by the state and non - state structures, which provide high - speed exchange of large flows of information between regions, are developing.

Keywords: information technologies, pedagogical innovations, software tools, innovative teaching methods, applied software.

Introduction

Modern information technologies are the basis of the process of informatization of education, the implementation of which assumes: Improving the quality of learning through more complete use of available information. Improving the effectiveness of the learning process on the basis of its individualization and intensification; development of perspective means, methods and technologies of training with the focus on developing, out-of-the-box and personalized education.

With the help of the project, European Education Initiatives will be able to provide young people with the popularity and popularity of IT-related companies: C # .NET Developer; JAVA Developer; Frontend Developer; Full stack Developer (Frontend + Backend); Game Developer; PHP Developer. The use of the information system in the learning process allows not only to give students information about the object of management, but also helps them to understand all the diversity and complexity of relationships typical of real enterprises, to trace the dynamics of these relationships when changing external and internal factors, and also to destroy the interdisciplinary barriers formed by students due to the time sequence of the presentation of educational subjects. Such a toolkit makes it possible to construct modern educational technologies that involve the formation of extraordinary thinking by students, a creative approach to management.

Today, one of the characteristic features of the educational environment is the ability of students and teachers to turn to structured teaching materials, educational multimedia complexes throughout the university at any time and at any point in the space. In addition to the availability of educational material, it is necessary to ensure who is trained to communicate with the teacher, obtaining consultations in on-line or off-line modes, as well as the possibility of obtaining an individual "navigation" in mastering a particular subject.

Modern European educational initiatives are analyzed, informatization of education envisages development of informational and educational environment, essential role in creation of which is educational television. It is determined that today in the field of development of the information and telecommunication environment the main channels of data transmission, owned both by the state and non - state structures, which provide high - speed exchange of large flows of information between regions, are developing.

Main part

Modern information technologies are the basis of the process of informatization of education, the realization of which implies: improving the quality of learning through the full use of available information; increasing the effectiveness of the learning process based on its individualization and intensification; development of perspective means, methods and technologies of education with an orientation towards developing, advanced and personalized education; achievement of the necessary level of professionalism in mastering the means of computer science and computer technology; integration of different types of activities (educational, educational, research, methodological, scientific, organizational) within the framework of a unified methodology based on the application of information technologies [5-7].

According to the "European Educational Initiative Project", posted on the website of the Ministry of Education and Science of Ukraine, starting in January 2016, a European Education Initiative project is being implemented in Ukraine. The project is aimed at developing IT-education and integrating the best international practices into the system of training IT-specialists. The goal of the project is to provide everyone with high-quality modern education in the field of information technology, to help IT-specialists to be competitive and guaranteed employment. With the help of the project, European Education Initiatives will be able to provide young people with the popularity and popularity of IT-related companies: C # .NET Developer; JAVA Developer; Frontend Developer; Full stack Developer (Frontend + Backend); Game Developer; PHP Developer [2, 3].

In Ukraine, for a fairly short period, there have been cardinal transformations, in place of the traditional

system of education, a system comes into existence, which has a setup for the formation and formation of a well-developed, creative person, capable of easily adapting to constantly changing environmental conditions, orienting in the flow of information, continuous but self-development [4, 6, 7].

It should be noted that European educational initiatives - a joint project of the Council for the competitiveness of the industry of ICT (IICT), leading companies of the IT industry and training centers of commercial information

Fig. 1. Remote resource of the Central Institute of Postgraduate Pedagogical Education of the State University" University of Management Education

technology, implemented with the support and in partnership with the Committee of the Verkhovna Rada of Ukraine on Science and Education, the Ministry education and science of Ukraine. The Industry Competitiveness Council (ICC) is an all-Ukrainian public organization that since 2012 has united companies of information and communication technology industry, training centers for commercial information technologies, higher educational institutions and government officials in order to create the competitiveness of the domestic ICT industry.

The website of the Ministry of Education and Science of Ukraine contains professional standards for the training of future IT industry professionals, including: product manager in the field of informational technologies; Project Manager in Information Technology; specialist in information resources; specialist in information systems; specialist in software development [2, 3, 5, 7].

Distant education (DE) has been developing for a long time in parallel with the development of the Internet, and recently, a breakthrough in the field of the new approach to learning - mass online courses has occurred in this area (Fig. 1).

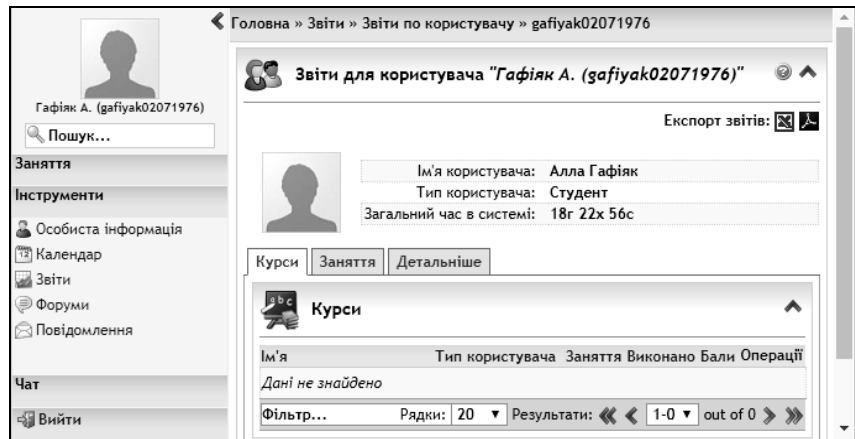The use of the information system in the learning process allows not only to give students information about the object of management, but also helps them to understand all the diversity and complexity of relationships typical of real enterprises, to trace the dynamics of these relationships when changing external and internal factors, and also to destroy the interdisciplinary barriers formed by students due to the temporary sequence of presentation of educational subjects. Such a toolkit makes it possible to construct modern educational technologies that involve the formation of extraordinary thinking by students, a creative approach to management (Fig. 2).

Distant methods already have an impact on institutions of higher education in Ukraine, and this influence will increase. Leading universities of the country are actively introducing DN technologies, responding to the demand from people living far, including abroad.

Today, one of the characteristic features of the educational environment is the ability of students and teachers to turn to structured teaching materials, educational multimedia complexes of the entire university at any time and at any point in space. In addition to the availability of educational material, it is necessary to provide the learner with the opportunity to communicate with the teacher, get advice online or offline, as well as the possibility of obtaining individual "navigation" in mastering a particular subject.
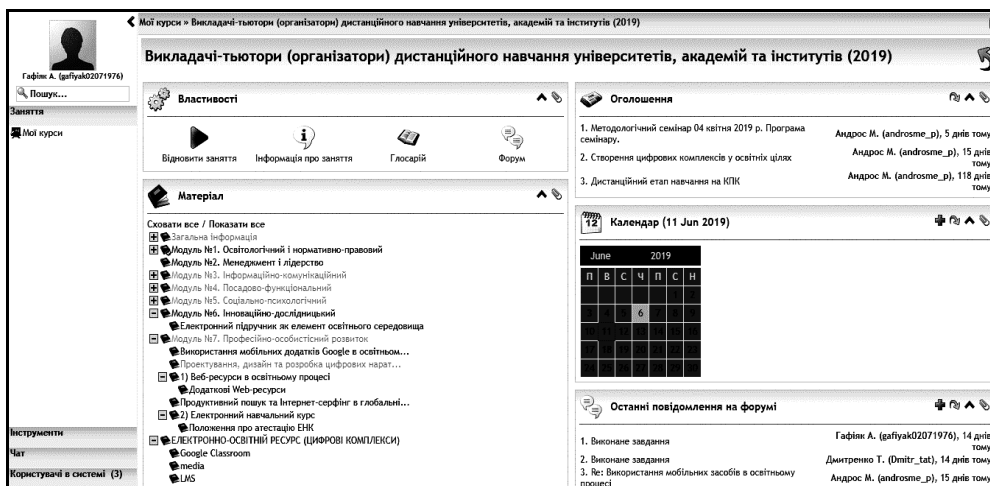

Fig. 2. Remote resource of the Central Institute of Postgraduate Pedagogical Education of the State University" University of Management Education

One of the definitions of the informational educational environment is formulating its understanding as an information system, which combines with network technologies, software and hardware, organizational, methodological and mathematical support, designed to increase the efficiency and accessibility of the educational process of training specialists. In addition to the availability of educational material, it is necessary to ensure who is trained to communicate with the teacher, obtaining consultations in on-line or off-line modes, as well as the possibility of obtaining an individual "navigation" in mastering a particular subject.

Conclusions

Modern European educational initiatives are analyzed, informatization of education envisages development of informational and educational environment, essential role in creation of which is educational television. It is determined that today in the field of development of the information and telecommunication environment the main channels of data transmission, owned both by the state and non - state structures, which provide high - speed exchange of large flows of information between regions, are developing.

REFERENCES

1. Symonenko N.N. Management of educational services using innovative teaching methods / N.N. Symonenko // Pacific State University Bulletin. – 2012. – № 2. – P. 201–206.
2. About the Concept of the National Program of Informatization: Law of Ukraine from 04.02.1998 № 75/98-BP // Verkhovna Rada of Ukraine. – 1998, № 27–28, Art. 182
3. I.Yu. Khomyshyn Principle of education's informatization in the conditions of globalization of society // [Electronic resource]. - Access mode: file:///C:/Users/ASUS/Downloads/vnulpurn_2016_850_21%20(1).pdf
4. A. Hafiiak A. Application of genetic programming tools as a means of solving optimization problems/ A. Hafiiak, E. Borodina, A. Diachenko-Bohun // Системи управління, навігації та зв'язку. – 2018 – Вип. 6(52). – С. 58–60. – doi: 10.26906/SUNZ.2018.6.058
5. E. Borodina Areas of application programming languages python and ruby / Borodina E.A., Alyoshin S.P., Hafiiak A.M., Smislov S.O., Sapsay E.V. // Modern engineering and innovative technologies. Isssue 7. Part 3. Sergeieva&Co Lußstr. 13 76227 Karlsruhe, Germany – P. 74- 77. DOI: 10.30890/2567-5273.2019-07-03-050
6. S.P. Alyoshin Developing q-orca site backend using various python programming language libraries. I/ Alyoshin S.P., Borodina E.A., Hafiiak A.M., Zhabran I.B., Kikot A.S. // Modern engineering and innovative technologies. Isssue 7. Part 3. Sergeieva&Co Lußstr. 13 76227 Karlsruhe, Germany – P. 48- 53. DOI: 10.30890/2567-5273.2019-07-03-021
7. Hafiiak A. Information technology as a component of improving the training quality future specialists in higher education institutions / Hafiiak A., Yastreba S., Nosach O., Borodina E. I // Системи управління, навігації та зв'язку. – 2019 – Вип. 2(54). – С. 60–65. – doi: 10.26906/SUNZ.2019.2.060

Формування професійної компетентності майбутніх ІТ-фахівців у закладах вищої освіти

А. М. Гафіяк, О. В. Шефер, О. О. Бородіна, С.П. Альошин

Розглянуто сучасні інформаційні технології, що є основою процесу інформатизації освіти. Досліджено процес підвищення якості підготовки фахівців у контексті розвитку системи загальної та професійної освіти. Проаналізовано визначення інформаційного освітнього середовища. Обґрунтовано, що онлайн-навчання є чинником підвищення рівня доступності освіти і має певні переваги перед традиційними формами отримання знань, забезпечуючи гнучкість через віддалений доступ до ресурсів. Аналізуються сучасні європейські освітні ініціативи, інформатизація освіти передбачає розвиток інформаційно-освітнього середовища, істотну роль у створенні якого відіграє освітнє телебачення. Визначено, що сьогодні у сфері розвитку інформаційно-телекомунікаційного середовища розвиваються основні канали передачі даних, що належать як державним, так і недержавним структурам, що забезпечують швидкісний обмін великими потоками інформації між регіонами.

Ключові слова: інформаційні технології, педагогічні інновації, програмні засоби, інноваційні методи навчання, прикладне програмне забезпечення.

Формирование профессиональной компетентности будущих ИТ-специалистов в учреждениях высшего образования

А. М. Гафияк, А. В. Шефер, Е. А. Бородина, С. П. Алёшин

Рассмотрены современные информационные технологии, что являются основой процесса информатизация образования. Исследован процесс повышения качества подготовки специалистов в контексте развития системы общего и профессионального образования. Проанализированы определения информационной образовательной среды. Обосновано, что онлайн-обучения является фактором повышения уровня доступности образования и имеет определенные преимущества перед традиционными формами получения знаний, обеспечивающие гибкость через отдаленной доступ к ресурсам. Анализируются современные европейские образовательные инициативы, информатизация образования предполагает развитие информационно-образовательной среды, существенную роль в создании которого играет образовательное телевидение. Определено, что сегодня в сфере развития информационно-телекоммуникационной среды развиваются основные каналы передачи данных, принадлежащих как государственным, так и негосударственным структурам, которые обеспечивают скоростной обмен большими потоками информации между регионами.

Ключевые слова: информационные технологии, педагогические инновации, программные средства, инновационные методы обучения, прикладное программное обеспечение.