

Improving the level of information technologies competence by means of web technologies

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Abstract. The article deals with the features of improving intending teachers IT competency to using Web technologies in their professional activity. The attention is given to the problem of forming informational educational environment, using Internet resources, webinars, forums, electronic portfolios in an intending professional activity in the studying disciplines "New information technologies and TT", "IT technologies in primary education", "Information technologies in the specialty".

Keywords: *IT technologies, informational educational environment, Internet resources, webinars, electronic portfolio.*

Introduction. One of the main features of forming modern civilization is the priority of intellect and displaying the scientific knowledge on the basis level of mankind existence and development. In the conditions of information society development the leading direction of reforming and modernizing the higher education system is the widespread using the information and communication technologies (IT) in education. The basic documents governing the relevant processes are Okinawa Charter on global information society (2000), the presidential decree "On measures on developing national component of global information Internet network and providing wide access to this network in Ukraine" (2000), the laws of Ukraine "On the concept of National informatization programme" (1998 with amendments in 2006, 2011, 2013), «On national informatization programme» (1998 with amendments in 2002, 2010, 2014), «On approval of the state information programme and communication technologies in education and science 2006-2010» (2005), « On the main principles of information society development in Ukraine during 2007-2015 years» (2007), «On higher education» (2014); National programme «Opened world» (2011), State target programme of implementing IT technologies in secondary schools educational process «One hundred percents» (2011), the decree of the President of Ukraine dated by 30.09.2010. №926, «2011 is the year of education and informational society in Ukraine», Forum of European countries Ministers of Education «The school of the 21 century: Kyiv initiatives» (Kyiv, 22–23.09.2011). One of the main European integration directions in secondary school education is the direction "IT- education without borders", the project "One pupil – one computer" (2011), orders of the Ministry of Education, Youth and Sports of Ukraine of 01.04.2011 №302 «On measures for implementing e-learning content » and «On implementing pilot project «Learnin - SMART education» (№ 812 of 12.07.2012), "On approval of the "Regulations on electronic educational resources"" (of 01.10.2012 №1060), the order of the Ministry of Education «On conducting the research and experimental work on the theme "The cloud services in education" on Ukraine secondary schools basis» (since 21.05.2014 № 629), the order of the Ministry of Education of 12.01.2016 №9 «On systematizing the experience of using electronic educational resources», the order of the Ministry of Education of Ukraine (№466 of 25.04.2013) «Distance studying regulations», The National Strategy of Education Development in Ukraine for 2012-2021 years (2013), European Union program

«Horizon 2020» (2014).

Thus, a special attention is paid to increasing the level of computer literacy, information competence, information culture, teacher's readiness to a systematic using IT technologies in teaching activities, that is displayed not only on the results of their studying activities, but also on forming their worldview, way of life.

Analysis of the researches and publications. The scientific papers research allows to confirm that teachers' professional training was studied in the following areas: psychological and pedagogical aspects of developing teacher's personality (V. Yevdokymov, M. Yevtukh, I. Zazyun, I. Pidlasy, I. Prokopenko, S. Sysoyeva, etc.); forming readiness to implementing certain educational activities functions (Yu. Bohdanova, O. Hluzman, S. Honcharenko, L. Kandybovych, L. Kondrashova, V. Slast'onin etc.). It was revealed that the new priorities of education policy require updating the activity nature of teacher education, in particular creating optimal conditions for intending professionals personal and professional development as well as technically and technologically educated individuals which are aimed at active life in the information society conditions, able to orientate in the information space, own and use the information to identify and effectively solve the problems in the real pedagogical process.

The pedagogical literature analysis (V. Bykov, M. Zhaldak, A. Yershov, I. Zavadsky, Yu. Doroshenko, R. Hurevych, N. Morze, Ye. Polat, Yu. Ramsky, O. Spivakovsky etc.) shows that IT is a widely used term and includes all the technologies that are used for communication and work with information resources and is defined as a set of fundamentally new tools and methods of data justification that provides a purposeful creating, transmitting, saving and presenting the information products with the lowest cost.

A significant value in the process of professional training is given to developing students' knowledge and skills to information search, systematization, classification and presentation (the use of information search, intellectual data analysis, expert systems, creating databases and information models, etc.). There are a number of requirements to the information, namely: brevity, clarity, accuracy, completeness and timeliness. The absence of any of these properties leads to the absence of utility or even harmfulness of the received information. Thus, for making pedagogical decisions, the information must be complete, as the extra (redundant) information can distract and interfere to find the right solution quickly and in time and may even lead to wrong conclusions and

decision on the basis of their incorrect decisions. Incomplete information leads to wrong conclusions or to its timeliness, because you have to waste time for specifying the information.

Thus, intending teachers must find the necessary information; organize the analysis, synthesis and generalizing the information; propose reasonable hypothesis; conduct an experiment; make reasoned conclusions; foresee the consequences; choose the optimal solution with the help of IT tools.

Materials and methods. The article is aimed at analyzing the features of improving intending teachers' IT competence to effective using Web technologies intending professional activity.

Undoubtedly, implementing IT in the educational process led to developing new e-pedagogics, studying the problems which have their own characteristics and accents, associated with the ability to search the information effectively, to use information and search engines, electronic publications, to obtain and distribute the necessary information in a short period of time, to share the experiences in teaching methodics, in using innovative technologies (chats, blogs, webinars, electronic boards, etc.) [4].

An important role in increasing intending teachers' theoretical level and improving their information competence plays webinars (kind of web conference, which takes place in real time). Communication between webinar participants is supported with the help of special software or web service (WizIq, BigBlueButton, Videoleti etc.). Webinar is a technology which allows to reproduce in online regime such forms of training as seminar and laboratory work, lectures using audio, video, presentations, whiteboards, chat. With their help a virtual "class-room" that bringing together all the webinar participants is created.

Web-quest (Bernie Dodge, Tom March, 1995) is defined as a project activity organizing method with using Internet resources. The educational web quest feature is that all the information on the research problem students find in the Internet by themselves. They present the found information in the form of Web-pages and Web-sites. (education.weebly.com, sites.google.com, wix.com, webnode.com.ua, jimdo.com, webs.com, yola.com, schoolrack.com, smore.com etc.). Usually the process of creating Web-quest has some stages: introduction (aimed at creating students' interest); the task (describes the activity results); the process (following the given websites list students' step by step actions are described); evaluation (this part provides the criteria for students' evaluation); the conclusion (summing up the work on the problem). Therefore, organizing the research using network resources is an effective method of mastering the Internet for educational purposes [1].

One of the directions for updating the education system is to build students and teachers community based on network servers Web 2.0 (Tim O'Reilly, 2005). It should be pointed out that there are several promising modern web technologies, which allows teachers to solve diverse educational goals. One of such technologies is still Web 2.0 that is the second network services generation, recently became the basis for developing the Internet. They include social search engines, tools to save bookmarks (online tools to save links to web pages), social services for saving media resources (Internet services that allow

free store, classify, share digital photos), weblogs; knowledge maps etc. The technology continuance is the creation of semantic web Web 3.0 (Jason Calacanis, 2007) [3].

Practice in using Web 2.0 technology suggests the possibility of their use in pedagogical activities, namely:

1. The use of opened and free electronic resources. In the result of spreading social services in the network access is a huge number of materials that can be used for training purposes. The network community participants can share their information resources collections.

2. Independent creating online educational content. New social security services have radically simplified the process of creating materials and publishing them on the web. Now every user can not only get an access to digital collections, but can also participate in shaping their own web content.

3. Developing information concepts, knowledge and skills. Modern information programs gives entirely new possibilities for action, in which is extremely easy to engage people who do not have any special knowledge in the field of IT technologies.

4. The Internet gives new opportunities to participate in professional scientific societies, extending not only our intellects, but also the area for joint activities and cooperation with other people [5].

Creating special interest to knowledge maps or mental maps (mindmeister.com, bubbl.us etc.) is an effective tool for structuring and analyzing information that allows you to speed up the process of learning materials, to increase information memorizing degree, to accelerate personal and collective projects development. In the center of mental maps concept is situated the understanding the human brain principles: associative thinking, imaginary images visualization and their holistic perception. To stimulate associative thinking special, convenient for the brain, radiant diagrams (mental maps) are used, presented in the form of a tree of ideas. An important feature of mental maps is their saturation with visual images and effects that implement the associative and hierarchy thinking [2].

Taking into account the dynamics of information and communication technologies development, the relevance of creating an electronic portfolio (e-portfolio) is emphasize, which can store, modify and export information in various formats (Sway, Wikispase, Mahara, Mahoodle). Studying sites dedicated to studying the e-portfolio theme shows that teacher's electronic portfolio is a form of Internet support of the educational activities that includes a description and directions to some practical work, methodical materials and recommendations that ensure the fulfillment of the proposed works, materials for certification and self-certification, research and creative work. In addition, the electronic portfolio is an innovative form of educational achievements evaluation, which helps to support and stimulate students' studying motivation, encourage their activity and independence, broaden the opportunities of their studying and self-studying, develop students' skills in reflective and evaluating activities, create the ability to study, define goals, plans and organize their own studying activity.

Creating and using the electronic portfolio enables the teacher not only to carry out educational activities, but also to analyze, generalize and systematize the results of their work, objectively evaluate their capabilities and plan

activities to achieve better results in pedagogical activities.

Nowadays there exists a number of educational web portals, where you can find innovative developments, put their course materials, create your own website (blog) that is modern and accessible way of presenting information.

Results. Thereby new disciplines, such as "Information technologies and TMS", «IT technologies in primary education», «Information technologies in the specialty» were implemented in Oleksandr Dovzhenko Hlukhiv national pedagogical university educational process. The specificity of teaching these disciplines takes into account the regulatory framework for introducing IT technologies in educational process and according to the logic of the content corresponds to the methodical recommendations on "Information and communication technologies in education" course [4].

In the process of studying courses educational material, in self-education elements of distance studying technologies requiring creating the only one information educational environment are used. This environment brings together a wide range of educational software and network technologies, including email, cloud computing, forums, blogs, webinars, wikis-sites, online courses, library and other teaching tools based on the use of web technologies. The corresponding form of organizing educational activity allows to expand students' knowledge on the theory and practice of distance learning

organization and management, the possibilities of using IT technologies in the process of distance learning developing, organizing, implementing, and teaching (tutoring) support [6].

The practice of studying the disciplines "New information technologies and IT", "IT technologies in primary education", "Information technologies in the specialty" taking into account the potential use of distance learning elements, electronic portfolio, Mashup technologies, interactive multimedia presentations (Prezi) and created by means of scribing proves the significant increase in the level of students' information culture, their readiness in using IT technologies in professional activities. The effectiveness of the studying process is reflected in a significant number of students' developed their own blogs of courses methodical support on a professional orientation, which is appropriate for use during passing pedagogical practice and in their intending professional activities.

Conclusion. Studying the advantages and opportunities of implementing IT technologies in the modern Smart-education, developing the skills of creating information educational products and developing modern e-resources based on these technologies, generalizing experience of their use provides implementing the educational process in modern educational institutions to an entirely new level, allowing to increase the importance of active, independent and creative studying.

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Повышение уровня ИКТ компетентности средствами WEB-технологий

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Аннотация. В статье рассмотрены особенности повышения ИКТ компетентности будущих учителей к применению Web-технологий в профессиональной деятельности. Акцентировано внимание на проблеме создания информационной образовательной среды, использование Интернет-ресурсов, вебинаров, форумов, электронных портфолио в будущей профессиональной деятельности при изучении дисциплин «Новые информационные технологии и ТСО», «Информационно-коммуникационные технологии в начальном образовании», «Информационные технологии в специальности».

Ключевые слова: информационно-коммуникационные технологии, информационное образовательное пространство, Интернет-ресурсы, вебинары, электронное портфолио.