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THE USE OF VISUAL METHODS IN EDUCATION AT VARIOUS LEVELS

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В роботі розглянута одна з глобальних задач педагогіки – підвищення якості національної освіти на всіх рівнях шляхом впровадження інноваційних методів. Пропонується ефективний та доступний спосіб створення навчальних матеріалів на базі сучасних хмарних сервісів. Отримані результати досліджень подано у вигляді практичних рекомендацій щодо використання мережевих технологій в процесі створення інтерактивного смарт-середовища середовища

Ключові слова: дистанційна освіта, тренажер, смарт-навчання, інноваційні методи, мережеві технології, інтерактивне середовище

In the article author consider one of the global tasks of pedagogy - improving the quality of national education at all levels through the introduction of innovative methods. It is proposed an effective and affordable way to create training materials based on advanced cloud services. The relevance of the topic is reinforced by changing needs in the context of internationalization that affects education planning, mobility, labour market and knowledge-based societies. Changes in methodology (contentbased language teaching, digital technology, elearning, blended learning, etc.) are attempts to rationalize the time spent on learning and to possibly satisfy individual needs. According to the paradigm of smart education, the education process and learning should be adapted to technical, cognitive, psychological, educational, professional and other needs of students, as well to the changing socio-economic environment. Received results of researches are presented as practical guidelines for using network technologies in the process of creating an interactive environment.

Keywords: distance education, simulator, SMART-learning, innovative methods, network technologies, interactive environment

1. Introduction

Modern information society is gradually transformed into Smart Society, as noted by sociologists, philosophers, specialists in IT sector, educational specialists, etc. This concept implies the new quality of society, in which a set of technological means, services and Internet used by trained people, leads to qualitative changes in the interaction of subjects that allow receive new effects – social, economic and other benefits for a better life [1, 2]. The rapid spread of computer technology leads to fundamental changes that impact on learning process. An increasing gap between the level of knowledge those who have an access to modern information technologies and those who does not have such access.

Theoretical aspects, design and the use of digital, interactive multimedia in the educational process is an urgent problem [3].

2. Analysis of the literature and the problem statement

Distance learning contains a high level the use of new technologies, the availability and attractiveness for teachers and students the availability of sufficient options to satisfy their various needs, opens new opportunities to lifelong learning of specialists and forming the necessary repository of predicted ensure compliance functions to achieve the objectives in the short term. As a result of new technologies the ongoing changes are in pedagogy. Technological changes that have led to the expansion of training programs, were directly influence on the culture of learning too.

In modern scientific literature sufficiently covered the theoretical aspects of the interactive training center (SMART-structures, supplies, tools, etc.), focused on application software to develop teaching materials for different types of work and describes how to use interactive technology in the classroom. The literature review with a description large number of methods confirms that is more than 50 % of today's jobs require high level of technical skills. Experts predict that this figure will increase to 77 % over the next 10 years [1]. Indeed, 25 % of positions related to IT remained vacant due to the fact that there is a lack of experience and qualifications [2, 3]. In today's economic realities criterion that determines the evaluation of the quality of training of graduates is their competitiveness, and activities of the institution - to ensure adequate compliance with the education market and the labor market. Nowadays the deficit of specialists in the field of information technology in Ukraine is 30 % [4], despite this, the employment specialization is possible only in 25 % of graduates. That is very low and indicates the discrepancy of specialists to the needs of society by the level of their skills.

However, the theoretical aspects of the design and the use of interactive multimedia in the educational process are not covered sufficiently.

3. The object, aim and research problems

Object of research – learning process based on constant use of network technologies.

The aim of the article – describe the specifics and stages creation of interactive smart-environment based on network technologies.

To achieve this goal the following tasks have been solved:

1. Organization of training and implementation of new educational technologies to the cloud-based approaches.

2. Establishing a system with distance learning elements that provides a full range of services for communication and organization of educational process.

3. Creating the data base with learning materials (capacity of some terabytes) that is on the web-links and available from the world-wide.

4. Challenges of SMART-education

Potential of the interactive smart environment based on network technologies for the educational sphere is particularly large in adult education. Applying of advanced facilities and methods of teaching and learning allows to organize an effective learning process in the most suitable forms for students including the - providing opportunity of complete learning without any needs to the significant changes in current activity.

The current level of educational activities permeation in the life of adult population in Europe is largely achieved through the active introduction of new technologies - as proper a technical innovation, so and innovations in the educational process and teaching organization and also in the educational management.

In order with capable of Ukraine's education to respond the challenges of the future development of educational resources and improving their effectiveness using in the learning process, is proposed:

- create the training materials according to the specified topic (subtopics, individual classes) in the form of online reference collection (IER) as a main component;

- make the training materials available online and offline;

- use the IER, prepared for teaching in the classroom or at home, homework and self-study.

There's a growing array of interactive technologies reshaping our daily lives. Digital technologies are developing rapidly and the important task which is set before us - follow their development, and more importantly – to master them [5].

To respond the challenges of the future it is necessary to develop the new courses by applying following methods and models:

- flipped classroom [6];

- blended Learning model (rotation model, flex model, Model "Intensive" residency [7], enriched virtual model);

– microlearning.

A variant of software which actively introduced in the Ukrainian market are Cloud technologies – the technologies, that provides Internet users access to server of computer resources and Using Software as an online service. Among the advantages of cloud technologies developers dedicated the cost saving for the purchase of software (previously Office Web Apps):

- decrease the need for specialized premises;

- implementation of many types of training activities, monitoring and online evaluation;

- protecting against spam and viruses, anti-hacker security and open learning environment for teachers and students.

- as there is no need for keeping high disk space server, thereby reducing the expenditures for support staff;

Considering that the product is only begins to be implemented in the Ukrainian market users can get to know and appreciate the advantages and disadvantages (Office 365), e-magazines, online services for learning, communication, testing, distance learning system, the use of libraries, digital libraries, repositories of files, sharing options (Dropbox, SkyDrive).

Thus, reform of the conceptual principles of higher education should be aimed at changing approaches in the use of ICT in teaching and educational, scientific and application, monitoring and marketing processes.

5. The results of the research formation of Smart-environment

The process of transfer and assimilation of knowledge and skills should be based on principles of mobility, accessibility, high speed obtaining and transmission of information, its ability to processing of different systems.

Today's challenges

- Challenges faced by teachers:

- an effective communication with students during the whole training period;

- saving the student's interest;

- individual work with students according to their abilities;

- collaboration with colleagues;

- Challenges faced by students:

- teamwork with classmates and teachers irrespective of capabilities and location;

– obtaining remote access to the educational material.

– Challenges faced by administration:

- meeting students' needs while still having a limited budget;

- to conduct coordination with wide geography of students and teachers;

- create public base of smart-environment educational material for all participants in the educational process.

Training organization based on advanced cloud services

Students have access to educational materials and the opportunity to talk with the teacher regardless of the location

- Contact teacher for personalized learning from any device.

- Collaboration with other students to improve their own level of knowledge.

– Teaching materials are always available

Teachers provides world-class education in any location from any device

- Learning considering personal needs of each student.

- Communication with students from any device.

- Cooperation with colleagues to share best practices and improve the quality of education.

Administration expands possibilities of teachers and students to achieve the better results.

– Renders better tools for learning in their class

- Provides opportunity to constant communication between student and teacher.

- Implement modern technology to achievement of greater at the lowest cost.

What kind of changes it will make to the educational process?

- Possibility of organizing highly efficient and modern distance learning which meets all contemporary problems.

- Remote ability: students and teachers have anytime access to the necessary educational and organizational material.

- The unified data control: introduction of modern technologies can reduce the time and monetary costs on visual meetings increase productivity institution as a whole.

Technical Review of components **Exchange Online**

- An edu domain e-mail with a 50 GB inbox, calendar and business-level contacts.

- Common access with colleagues to calendars, contacts and tasks.

– Integrated protection from spam and viruses.

- Access your email from a PC or mobile device.

SharePoint Online

- Website with the domain of the institution.

- Sites of working groups for storage general documents, with tracking their versions and statements.

- Sites to collaborate on documents with colleagues, students and external partners.

The joint editing of documents Microsoft Excel, Microsoft Word, Microsoft PowerPoint and Microsoft OneNote.

Skype for Business

- Conducting online meetings over the network, with the ability to display the screen and conduct joint notes.

– Instant messaging, voice and video calls.

- Skype for Business transforms communication into a stable, efficient and attractive learning process.

IT Academy

- Distance Learning System E-Learning with a set of online courses.

- Training courses for teachers.

Carried out research of the impact of interactive tasks on the success level of course listeners and understanding of educational material revealed that the degree of assimilation of the material of such students is higher, than those who studied for the "standard" method of teaching [8]. In this case, the teacher can submit the material differently (create the interactive simulators, tests, video lectures or presentations), even "work with colors" if existing templates accommodate distance learning courses do not meet ergonomic indicators. Create the shell (interactive simulator) to the specific course independently.

For example, by studying a course dedicated to the fundamentals of design or animation, 3-D modeling of different software, consider what will be studied in the course, so that the listener is immediately absorbed in discipline (Figure 1-3). Need to create comfortable environment for the listener where the student can easily navigate, focusing on learning material, test questions and the order of work, but not the program simulator management.

The use of frames is compulsory. Allocation area of the screen into multiple separate windows allows you to solve the problem of navigation, simplifying to the user find the right information (Fig. 1), to more effectively organize dialogue (tooltips, comments, assistance – Fig. 2). It is desirable that frame structure has not changed much during work because the frames flashing on the screen will fatigue the listener and thereby significantly reduced its level of activity.

The economic attractiveness – Rental Software

- Rent the software about 3–4 times cheaper than buying licenses that become obsolete in a few years and there is a need to buy new ones.

- Software is always the latest version.

- Each student and teacher receives free Office365 Professional Plus, which are available in all applications Office, the initiative Microsoft Student Advantage.

- The right to receive the new version and return to the previous version.

- The right to the use of one copy of the software on a home PC (Work at Home).

How it looks

- Administrative Online control panel

- Appointment scheduling of the webinar

- Video call

- Working together on a board for participants

- Joint revision of presentation slides for participants



Fig. 1. Example of simulator's cover page



Fig. 2. Example of page "User Manual"

Put the information with minimal use of "line scrolling" to consider in advance the size of illustrations and animations, so they were quite visible on the screen. If this is not possible, you must logically share information and submit its indidual frames.



Fig. 3. Example of page with task selection

Take into account that students can be found with some physical disabilities (such as vision), so you need to duplicate the sound of textual information.

It is very good if you can study a full time, but for the present rapid growth of new technologies or the lack of specialist appropriate level, there is only one solution – to learn using various distance learning courses.

According to the simulators functions it can be divided into the following groups:

1. The simulators that taught the knowledge – are electronic books. In which, due to the wide use of multimedia (graphics, animation, sound) significantly increases the effectiveness of training [8]. Modern technology can easily complement present in electronic textbooks mathematical formula "pop" prompts and graphic illustrations – contextual explanations and even, if necessary, sound explanation.

2. Supervising simulators – testing programs intended to test the student's knowledge on the topics of laboratory or practical works. This is the most common group of simulators, which is used for self and knowledge control. In our opinion, it is necessary to gain a controlling effect to inform the listener not only the number of points for the passed test various incentive actions, but also to introduce demerit points. Thus constantly stimulate the listener.

3. Simulators that taught the ability – multimedia and animation imitators intended to simulate the change of the physical equipment (devices and instruments) under different conditions, creating the illusion of action from the physical hardware (for component of the engineering students), so simulation work complicated software products with obligatory effect of reproduction the "permanent presence".

This is a particular script or educational trajectory of events to work with electronic resources in the form of card-knowledge that leads to academic achievement effect and has properties such as flexibility - ensure the possibility rapid editing resources; availability of individual learning paths - that is, the ability to make a set of educational elements individualized education program for everyone; integration of educational elements from other open information resources; focusing on the educational needs of the students/pupils, the personification of content; interactive training elements of the course; maximum use of multimedia technologies; feedback between teacher and students/pupils; availability of educational elements that ensure effective communication and cooperation between students / pupils among themselves and with the teacher, including project-based technologies; providing communications using modern social networking services [9].

6. Conclusions

Information and communication technologies (as most operational) make it possible to keep the unity of educational space, enhance cognitive interest of students in general contributes to the development of distance education system.

Major advantages

- greater level of openness and freedom of choice of means and methods;

- Integration of educational and information technologies;

focus on the development of the individual teacher and student / pupil;

- consideration of trends of information technology.

The main purpose of establishment our distance learning courses is to provide knowledge and practical skills in using the latest technologies. We have already learned how to transfer knowledge in various ways, but there is not so good with the practical skills. In our opinion, the combination of interactive multimedia tools provides the required connection from the "broadcast from the rostrum of knowledge" to the discussion that will be created by the listener, and in turn, will enable him to acquire new knowledge and update an own skills on the real examples, expand competencies and open their own creativity.

About thirty years ago, vocational guidance is mainly limited to advice clients on what qualifications and experience that are needed for a specific profession, how to get this experience and then passed basic information on individual jobs. In place of this came the time when the main attention was paid to psychological methods: the use of tests to determine the abilities of the individual, the comparison revealed attempts abilities and capabilities and requirements of different professions [10].

Based on the above we can say that in the new environment of the information society is increasing relevance of activation of educational activities and the need to expand educational find its solution, including visualization tools training. This requires identifying, understanding and implementation of new features and functions of visualization tools and adequate IT-ways to work with them at all stages of the educational process. They allow to initiate, maintain and improve such mechanisms thinking as dialogue – the interaction of internal and external training cognitive activity plans, processes display of the objects, processes, image projection and projection object known mental image "in the outer region of space."

Visualization of educational information can solve a number of educational objectives: ensuring the intensification of education, enhance learning and cognitive activity, formation and development of critical and visual thinking, visual perception, imaginative knowledge representation and educational activities, knowledge transfer and pattern recognition, enhance visual literacy and visual culture. So, at this stage of education to address this phenomenon is inevitable, and it is submitted the key to solving the problem of providing quality education and activation of educational activities including the transition from part of intuitive drafting didactic clarity to the planning and design of didactic visual education at all levels [11].

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ДОСЛІДЖЕННЯ ДИДАКТИЧНИХ ЗАСАД ФОРМУВАННЯ НАВИЧОК ГОВОРІННЯ АНГЛІЙСЬКОЮ МОВОЮ СТУДЕНТІВ ВИЩОЇ МИСТЕЦЬКОЇ ШКОЛИ УКРАЇНИ

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У статті аналізуються дидактичні засади навчання та розвитку навичок іншомовного спілкування студентів мистецьких спеціальностей сучасної вищої мистецької школи. Окреслено залежність між змінами ціннісних орієнтирів у суспільстві та змістом навчально-професійної тематики, вказано на співвідношення понять «спілкування» і «комунікація». Визначено, що дотримання у навчанні дидактичних засад покращує якість засвоєння студентами англійської мови та сприяє їх умінню спілкуватися Ключові слова: комунікативна компетенція, спілкування, говоріння, дидактика, комунікативний метод, мистецькі вузи

The didactic principles of training and development of another language speaking skills of the students of higher art school are analyzed in the article. The dependency between the changes of value orientations in society and content of teaching-professional themes was outlined, the relation between the notions "communication" and "intercourse" and their role in communicative interaction was indicated. The main aim of research is in the analysis of the features of didactic aspects to facilitate and accelerate the comprehension of language by students of the higher art schools. The author underlines that communication is an important condition in the process of formation and development of both society and person. At the same time communication is the base of consciousness, cognition and social interaction for the solution of actual problems of reality. The series of didactic principles were separated:

1) improvement of teaching method by reorientation from pragmatic to communicative one;

2) modernization of the content of educational material;

3) guaranteeing of connection between teaching and extra-teaching activity in the process of speaking skills and abilities formation;

4) proper training of students for computer study and testing;

5) guaranteeing of integration of multicultural information with the main program material of professional academic disciplines.

The author makes the conclusion that the observance of didactic principles in the study improves the quality of mastering English language by students and favors their ability to communicate

Keywords: communicative competence, communication, speaking, didactics, communicative method, art HEI

1. Вступ

Стан життя в сучасній Україні ставить перед викладачем завдання: виробляти вміння і навички застосовувати знання на практиці, формувати світогляд у час реформ та соціально-економічних, техніко-організаційних змін, що відбулися у вітчизняній галузі мистецтва. Вища школа є важливим етапом у процесі оволодіння іншомовним мовленням, культу-