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PROS AND CONS OF USING THE COMPUTER TECHNOLOGIES IN MODERN EDUCATION

E. Zelenov, O. Styopina

The article discusses the so-called "myths" of using computer technologies in the educational process, as well as the actual situation around ICT efficiency in education. It also analyzes the advantages and disadvantages of visualization of the educational process. The basic features and characteristics of information educational space, such as the ability to provide its members the freedom to choose the pace, content, methods, organizational forms and individual learning activities, its trajectory and vector, its multiculturalism, etc. are defined in it.

Keywords: *information technologies, ICT, visualization of knowledge, educational space.*

To date, there have been significant and irreversible changes in means of learning. There has been a shift to the emergence of the educational environment in the activity-oriented teaching practice, and then – to the educational space in the student-centered teaching. Now there is intense transition to a common educational space, fueled by the rapid development of information technology. Computer technologies are now used in the educational process at all levels, from pre-school to post-graduate training. In this article we'll try to analyze some pros and cons of using the computer technologies in modern education.

Many studies all over the world show a dramatic increase in performance while using computers in educational process. D. J. Leu in "Literacy and technology: Deictic consequences for literacy education in an information age" says that the most important aspect of computers in education is that they provide drill and practice for a student. Unlike teacher instruction, which may become tedious over time, computers provide motivation to the student to continue learning [1]. T. Hurme in "Students' Activity in Computer-Supported Collaborative Problem Solving in Mathematics" (2005) proves that utilizing computers in education makes abstract concepts visible to students who may be discouraged from learning

material. In his study on the effectiveness of computers used in problem solving mathematics, he found using computers to be an ideal method of teaching. Computers helped students to "use their mathematical knowledge and stimulate them into making their thinking visible (Hurme, 2005)" [2]. And the most effective aspect of the computer is the Internet, which provides access to the huge amount of information to every student. The main advantage of information technologies is their interactivity. If teachers take into account this fact, the activities of individuals in the educational space can be organized in many ways: as communication with teachers via the Internet (the answers to the questions, teacher's explanations, performance of tests and exams, etc.), as the interaction with other learners (discussions, conferences, round tables, etc.). More over, many authors insist that the usage of higher technology leads to higher scores and to a more positive social climate inside the classroom.

Other scientists, for example A. Aviram in the article "From "computers in the classroom" to mindful radical adaptation by education systems to the emerging cyber culture" (Aviram, 2000) shows that computer technologies in education have small to moderate-sized positive effects on achievement. From research, it can be concluded that computer technology is best used when it is in addition to the instruction of a teacher and not when it replaces the teacher [3]. Besides, as S. Goldman, K. Cole, and C. Syer in "The technology/content dilemma" (Goldman, Cole, & Syer, 1999) observe, "teachers' first technology projects generate excitement but often little content learning. Often it takes a few years until teachers can use technology effectively in core subject areas." [4]

For modern civilization the constant shaping of independent critical thinking is very important. The indicators of this kind of thinking are: the ability to work with information, the high level of informational culture, the ability to use computer technologies for the transmission and processing of information. On the other hand, there are some definite cons of using computer technologies in the educational process, which we are going to investigate in this article.

The purposes of this article are investigation of so called "myths" of using computer technologies in educational process and finding out the real situation around the effectiveness of ICT in education.

One of the main features of the information educational space is the ability to provide its members the freedom to choose the pace, content, methods, organizational forms and individual learning activities, its trajectory

and vector. And this is its great advantage over the traditional educational environment. However, in this case, control weakens to some extent, and, consequently, the role of the external management of the educational process reduces. At the same time, this lack to some extent is compensated by higher productivity in terms of the development of the creative potential of students. Because the participant- and- user of information educational space not only remembers the information, but creates its own understanding of subjective content of learning.

Another sign of the information educational space is its multiculturalism, which stems from its very essence. Values and artifacts of various cultures of humanity collide, interact and compete in it. The process is complex and differently valued by the representatives of different ideological platforms. Whether it's good or not, but information educational space is the platform for the development of the global consciousness of its users. And a huge part in this important process plays the phenomenon of visualization of knowledge while using of ICT in education.

The appearance of information society, the emergence of fundamentally new means and formats of communication, the creation of open virtual educational environment has a set of vectors of influence on the processes of education, training and socialization of the younger generation. One of these vectors is a change of priorities in receiving information (including training) from the reading process (text message) to the visualization process (visual information).

One of the benefits of visualization of information is the speed of processing and perception of information (verbal description - 2.8 sec., drawing - 1.5 sec., color photography - 0.9 sec., video resources - 0.7 sec., subject - 0.4 sec.). Its another advantage is the better memorization: information is laid in long-term memory because a process involves various channels of perception (hearing, sight, etc.). Due to the constant practice of various senses there is intense development of sensory-perceptual abilities. One more advantage of visualization is the development of thinking skills because of a problematic information supply. According to P. Norton, "the process of visualization is a curtailment of cogitative contents into a visual image, which can be deployed and which can serve as a basis for adequate thought and action." [5]

Visualization of information in the educational space, among other things, contributes to the preparation of the person to the effective functioning in a multicultural society. In this space, students gradually acquire the ability

to allocate both general and culturally specific models of development of various countries and civilizations, develop skills of representation of their country and its culture, taking into account the possible cultural interference from other participants in the interaction, hone skills to defend constructively their own positions without belittling others and without coming in direct dependence on other people's priorities.

Taking into account these and many other benefits of visualization of educational information while using of ICT in education, we have to be aware of the risks of its use in the information educational space.

Into the traditional socialization are organically included familial, national, social, political, vocational and educational contexts of human existence, but with the emergence of free information educational space, search of personal identity is influenced by the world of modern communications, making basic emphasis on the visualization (of image, packaging, brand, etc.), and on the interaction and self-expression of identities in real space.

Man, when he moves away from the traditional social institutions: religion, ideology, education, family, etc. finally finds himself in a fantasy world, where the "visual structure" is implanted into the social space, replacing the actual "order of interactions" by the effects of packaging in the format of a particular genre. No wonder modern civilization is often called the "civilization of packaging", meaning not only and not so much the actual packaging for goods.

The risk of substitution of the real knowledge by spectacular "packing", using the power of visualization, also exists in a multicultural information educational space. Meticulous daily work is required for neutralization of the negative effects of visualization and for the development of its benefits for multicultural education of the younger generation.

Besides the advantages and disadvantages of visualization of educational process there are some other pros and cons of using ICT in learning. In spite rather a short history of computer technologies, there have appeared definite myths of ICT in education.

K. Toyama in "There Are No Technology Shortcuts to Good Education" argued that technology in education has a poor historical record; that computers in schools typically fail to have positive impact (with the rare exceptions occurring only in the context of competent, well-funded schools); that information technology is almost never worth its opportunity cost; and that quality education doesn't require information technology. He also

disputes several common beliefs as for ICT using in education, which he calls “pro-technology rhetoric” or “the myths” (“The 9 Myths of Computing Technology in Education”, 2011). Here is the short summary of several items, which can be correlated with the realities of Ukrainian education:

Myth: 21st-century skills require 21st-century technologies. The modern world uses e-mail, PowerPoint, and filing systems. Computers teach you those skills.

Reality: People need to distinguish between the need to learn the tools of modern life and learning the critical thinking skills that make a person productive in an information economy (hard to learn, and not really any easier with information technology).

Myth: Technology X allows interactive, adaptive, constructivist, student-centered, [insert educational flavor of the month (EFotM) here] learning.

Reality: Without directed motivation of the student, no sustained learning actually happens, with or without technology. Good teachers are interactive, adaptive, constructivist, student-centered, and so on; they are also capable of something that no technology for the foreseeable future can do: generate ongoing motivation in students.

Myth: It’s easier for teachers to arouse interest with technology X than with textbooks.

Reality: Good teachers are exactly those who can engage students creatively, regardless of the aids available to them. Technology might amplify the impact of good teachers, but it won’t fix bad teaching.

Myth: Teachers are expensive. It’s exactly because teachers are absent or poorly trained that low-cost technology is a good alternative.

Reality: Technology cannot fix broken educational systems. If teachers are absent or poorly trained, the only proper solution is to invest in better teachers, better training, and better administration. [6]

According to T. Woronov (“From the Harvard education letter: Myths about the magic of technology in schools”, 1994), computers themselves do not automatically change the nature of teaching and learning, but that it is the way the teachers use the technology that creates a conducive learning environment. If computers are not used effectively then students lose out on a promising educational experience [7]. If we really want ICT to benefit the educational process, we need to distinguish between the need to learn the tools of modern life and learning the critical thinking skills that make a person productive in an information economy; and we have to remember that school systems should keep their focus on improving teaching and administration,

and that even good schools may want to consider more cost-effective alternatives to technology when making supplementary educational investments.

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«ЗА» И «ПРОТИВ» ИСПОЛЬЗОВАНИЯ КОМПЬЮТЕРНЫХ ТЕХНОЛОГИЙ В СОВРЕМЕННОМ ОБРАЗОВАНИИ

Е.А. Зеленов, Е.Г. Степина

В статье рассмотрены так называемые "мифы" использования компьютерных технологий в учебном процессе, а также реальная ситуация вокруг эффективности ИКТ в образовании. Проанализированы преимущества и недостатки визуализации учебного процесса. Определены основные характерные черты информационного образовательного пространства, например: возможность предоставления его участникам свободы выбора темпа, содержания, методов, организационных форм и индивидуальных видов учебной деятельности; его траектория и вектор, его мультикультурализм и некоторые другие особенности.

Ключевые слова: *информационные технологии, ИКТ, визуализация знаний, информационное образовательное пространство.*

«ЗА» І «ПРОТИ» ВИКОРИСТАННЯ КОМП'ЮТЕРНИХ ТЕХНОЛОГІЙ У СУЧАСНІЙ ОСВІТІ**Є.А. Зеленов, О.Г. Стьопіна**

У статті розглянуто так звані "міфи" використання комп'ютерних технологій у навчальному процесі, а також реальна ситуація навколо ефективності ІКТ в освіті. Проаналізовано переваги і недоліки візуалізації навчального процесу. Визначено основні характерні риси інформаційного освітнього простору, наприклад: можливість надання його учасникам свободи вибору темпу, змісту, методів, організаційних форм та індивідуальних видів навчальної діяльності; його траєкторія і вектор, його мультикультуралізм і деякі інші особливості.

***Ключові слова:** інформаційні технології, ІКТ, візуалізація знань, інформаційний освітній простір.*

Зеленов Євген Анатолійович – доктор педагогічних наук, професор кафедри педагогіки Східноукраїнського національного університету імені Володимира Даля (м. Луганськ, Україна) E-mail: olmer54@mail.ru

Стьопіна Олена Геннадіївна – кандидат педагогічних наук, доцент кафедри гуманітарних та соціально-економічних дисциплін Краснодонського факультету інженерії і менеджменту Східноукраїнського національного університету імені Володимира Даля (м. Краснодон, Україна) E-mail: edelvice151975@mail.ru

Zelenov Yevgen Anatoliyovych – Doctor of Pedagogical Sciences, Professor of the Chair of Pedagogics, Volodymyr Dahl East Ukrainian National University. E-mail: olmer54@mail.ru

Styopina Olena Gennadiivna – Candidate of Pedagogical Sciences, Associate Professor of the Chair of Humanitarian and Socio-Economic Disciplines, Krasnodon Faculty of Engineering and Management, Volodymyr Dahl East Ukrainian National University. E-mail: edelvice151975@mail.ru

Рецензент – доктор педагогічних наук, професор кафедри педагогіки Східноукраїнського національного університету імені Володимира Даля Белих Олександр Сергійович

Reviewer – Doctor of Pedagogical Sciences, Professor of the Chair of Pedagogics, Volodymyr Dahl East Ukrainian National University Belykh Oleksandr Sergiyovych