

OKSANA VYTRYKHOVSKA

National University of Bioresources and Nature of Ukraine, Kyiv, Ukraine

Readiness student and teachers to use of information technologies in training

One of the conditions of introduction of information technology in university practice are wide preparedness of teachers and students for their use, and it imposes high demands on the content of the latter.

Now, unfortunately, many teachers consider only the information of training as a process of introduction of computers in the education system. Obviously this is simplistic and unilateral understanding of the problem. She is a fundamentally new organization of educational process at a higher qualitative level of interaction of teachers and students in using computers. It is about creation of a new didactic model of learning technologies, the organization that assumes optimal human interaction with computer based on their wide implementation in all spheres of university life.

The analysis shows that the use of information technology has now significantly changed the role and functions of teacher and students to affect all components of the educational process: changing the nature, location and methods of superior teachers and students, the ratio of didactic functions implemented in the „teacher – Computers ‘put – student’” complicated programs and teaching methods of different disciplines and techniques are modified forms of education. Therefore, introduction of information technology educational process inevitably causes significant changes in the structure of the entire educational system of high school. Scheme of human-computer has enormous capabilities, able to offer a fundamentally new approach to the learning process, different from traditional.

Consider how information technology affects the use of teacher activities. In modern terms one can distinguish trends: more and more teacher freed from some teaching functions, including supervisory, leaving behind a creative, significantly changing its role and expand control, cognitive activity of students, changing quality of training, the computer being transferred all new teaching functions (presentation of educational information, demonstrations of processes and phenomena) are increased requirements for computer training teacher. According to S.I. Arkhangelsky: „changing the very nature of the teaching work, it becomes a creative consulting”[Архангельский 1980].

It should be noted that the role of teachers in using information technology not only remains an important, but even more complicated. He chooses the

course material for dialogue, developing structures and algorithms for student interaction and learning tools, forms management criteria Students actions of others. Contents of his work is increasingly becoming the nature of mentoring, which requires him not only the continuous updating of knowledge and professional growth, but broad methodological expertise. From the psychological point of view in applying information technology in some teachers have difficulties in mastering computer skills, the majority – through absence positive experience using computers during lessons with his subject. The novelty of the phenomenon to which the informatization of educational process, the additional burden on teachers, with property interrelated new, unusual knowledge, skills and teaching skills, lack of good quality modern computer technology, increased time for training sessions to form in some willy are determined prejudice, a kind of psychological barrier in consciousness, which inhibits positive motivation to master information technology. The most important condition for the effectiveness of professional activities in these conditions is computer culture. This means that teachers using computers in the educational process must know the possibilities in their subject area and have skills in using information technology, able to manage the work of students in computer class, select and compose appropriate educational material for purposes of the study to create a problematic situation in class, write their own or in collaboration with programmers learning programs to be able to intelligently combine computer use with other kinds of training activities.

Implementation of computer training of teachers effectively only if the formation of computer culture seen as an important element of teacher skills. She gets clearly expressed professionally designed landing attitude, motives are socially significant, resistant.

Sine qua non for the application of information technologies teacher is interested in its use. This means that the teacher should see that this technology helps him solve some problems of pedagogical training, more effectively for example, reveal the importance of study of educational material, increasing solubility, develop and consolidate the practical skills, manage learning activities, recording the results of learning, to promote students' reflection of the activity etc., and can free up time by automating routine steps tedious nature of academic work (for example, a study of the initial summaries section, checking the practical work etc.). Unfortunately, in some universities work on creating computer manuals are not centralized, and real labor costs do not include teachers in their individual work plans. Activity instructor in the use of computers very difficult. This is what a teacher makes in a new pedagogical environment and new ways of learning. He is able to influence the students indirectly through computer training. In these circumstances the teacher is changing the nature of work – he had to sell a number of functions that in traditional training sometimes totally absent. Thus, the computer culture teacher becomes crucial condition for successful implementation of IT in the learning process.

If you turn to the results of sociological surveys conducted in universities of the Russian Federation [Андреев 1990; 1995: 63–69; Интенсификация... 1995; Талызина 1975], it turns out that computer preparedness faculty now significantly lags behind the requirements of time. Not the best case and psycho-pedagogical preparation for the application of information technologies in Ukraine. Most clearly represented the latest in engineering schools, where trained technical and teaching staff is significantly higher than in the humanities, where over 90% of teachers of General and special disciplines and over 70% of all teachers have basic psychological and pedagogical training. This situation requires special study and develop practical recommendations for its change. Analysis of experience leading universities shows that the current psychological and pedagogical training of faculty out in different forms: faculty training, teaching collection, exchange of best practices, young school teachers and others. Their programs cover virtually all the major sections and questions of pedagogy and psychology of higher education. However, coverage, saturation can not program within the allotted time than examine many important issues of modern education and in particular the use of information technology learning process. Seminars or practical training program on these issues is often not provided. Another weakness of these programs is that they are not differentiated for teachers of different departments do not consider their specificity and their level of preparedness. It provides psycho-education of teachers of general nature, it ignores the main goal – a specific orientation. Not revealing more substantive issues, formulate concrete proposals to solve this problem. We consider it appropriate to prepare faculty to use information technology to carry out in three directions: at the university level, Interdepartmental by groups of related departments, the departments directly. For the lessons from the first and second areas partially involved both private and own specialists in pedagogy and psychology of higher education. Lessons from the third part and the other assigned areas most experienced teacher methodologist relevant departments. Given the nature of subject content and requirements of state educational standards, a group of related departments should be divided by the cycle of disciplines: the first group – the Department of the Humanities series, the second – natural science, 3rd – professional; fourth – the Department of the cycle of special subjects.

Contents psychological-pedagogical preparation of teachers groups said the department has developed the light-front differential principle according to which knowledge, skills and ability to use computers should be divided into general teaching (necessary when teaching any courses) and special (necessary in teaching specific disciplines). Analysis of excellence in teaching the use of information technologies, as well as discussions with a number of university teachers indicate that their use for effective teacher must master this set of knowledge, skills and abilities, general teaching knowledge: the concept of „information technology”, their purpose, functions and didactic opportunities,

classes and types of computer and information tools, principles of application of information technologies, their role and place in education, psychological and pedagogical conditions of application of information technology, the foundation of the definition effectiveness of their use in the learning process, basic forms and methods of teaching using information technology, general teaching skills and ability to: define the role and place in separate computer based learning process, didactic use their opportunities to pick up computer training subject to psychological and educational factors appropriate to find their didactical application; combine verbal (oral) presentation of educational material using computer and other means of education, front and shape of individual students to exercise discretion, structuring and preparation of educational material for its use etc. Expertise: role and place of information technology in education institution, academic discipline, operational and technical characteristics and didactic possibilities of their computer training, the specificity of complex use of computer tools, methods of application during different training sessions, and also in independent work of students, technology selection of educational material for its use etc. Special skills and ability to: justify the role and place of certain computer equipment in different kinds of classes on discipline to determine the content of educational material (subject partition) the optimal set of computer tools and the structure of their interaction during use; choose the optimum training classes, to develop information and teaching materials, to develop algorithms and a software application, be methodical explanation to them, be comfortable working with computers and its software, to analyze and determine the effectiveness of training sessions etc. Thus, general teaching of teacher training is formed in which the system of generalized knowledge, skills and abilities use computers, and special – they are fixing, problems and move into new, Interdepartmental Cathedral and conditions. The final phase of teacher training and checking the degree of their readiness to use computers is a practical implementation of knowledge, skills and abilities during the training sessions. Thus, teachers training receives its logical completeness. To implement these recommendations if you can arrange psychological and pedagogical training faculty in standing for groups of related departments (and when considering the joint general teaching) annual seminars. The volume of training offered to install depending on the needs of the institution, and the frequency of operation of two times per year during the training camp of the teaching staff. The seminar is to create conditions for improving the learning process by arming teachers with knowledge, skills, abilities using information technologies. The program should be differentiated by cycles of disciplines and include general, Interdepartmental and departmental sections. Contents degree program should take into account pedagogical, technical and special (computer) teacher training courses relevant disciplines. Particular attention should be preparing young teachers that are just on the educational path. For them it is very important to obtain maximum psycho-

logical and educational knowledge on the application of information technology is at the initial stage of their professional development. In this case the input special section on „Information technology in education learning university” in their training program for faculty training. It should be clear that the substantive preparations for the cycle disciplines, and will teach young teacher, held at the cathedral and Interdepartmental levels.

However, it is not properly be considered that the development of such programs (thematic plans) and their implementation remove all question of training faculty to use computers. Mastering the content of the programs create a foundation for continuous self-improvement teachers and creative research aimed at improving the training of students. Here, special importance should Cathedral to provide research and technical work. No less serious requirement puts a modern educational process for training students to use computers in their classroom. As the research on this issue at the example Technical University [Интенсификация... 1995] – there are serious problems exist. Yes, most students come to college having already sufficient computer training (50%), however, a challenge for most of them are the notorious „psychological barrier”. Since polls show that 44,4% among respondents who participated in the questionnaire, initially working with computers feel uncertainty. The very same learning process is often constructed so that after studying the first year of foundation and future computing the number of hours the students communicate with the computer dramatically reduced, particularly it occurs at the 3rd and 4th years of training. But if during this period have in their daily teaching activities using computers, this hurdle they have to cope again, that does not contribute to the quality of computer training. According to the study, psychological unpreparedness of students to use computers in the learning process turns out to lecture and stages of learning. Application of dynamic and static computer slides to increase the intensity of a lecture, increase the dynamics of learning material, increasing tension work of students, which also causes them serious problems. These are the results of experimental studies, described in [Образцов 1996]. So, at first lectures using static and dynamic computer training classes to the end program students sharply deteriorating health and mood which is not noted in the same educational groups in reading traditional lecture method. Additional survey showed that this was a result of psychological lack of training students to use information technology. These and other problems require very carefully study the specific and practical recommendations to address them, as that may be offered include: training sessions on the basis of information technology in the university, which technique to give students individual work with them to plan and organize the training process with use of computers so that students had an opportunity not to lose the skills obtained throughout the study. These activities should take serious problem and improve the preparedness of students to use information technology at the university.

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Рассмотрено влияние использования информационных технологий на деятельность преподавателя и студента, очерчены проблемы, возникающие при внедрении информационных технологий в учебный процесс.

Abstract

Influence of use of information technologies on activity of the teacher and the student is considered, the problems arising at introduction of information technologies in educational process are outlined.

Key words: informative technology, didactics, didactic aids.

Gotowość uczniów i nauczycieli do wykorzystania technologii informacyjnej na lekcji

Streszczenie

W pracy ukazano wpływ wykorzystania technologii informacyjnej na pracę nauczyciela i ucznia, jak również problemy wynikające z wprowadzania technologii informacyjnych do szkół.

Słowa kluczowe: technologie informacyjne, dydaktyka, środki dydaktyczne.