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## **Using of informations technologies and global network in educational process in a high and secondary school**

### **Entry**

XXI age is time of transition to hi-tech informative society, in which computers swiftly entered in the various spheres of our everyday activity. A computer provides intensification of activity of both pedagogical workers of educational establishments and students, students. Access to the network the Internet allows to carry out differentiation and individualization of studies. Therefore wide introduction of computer technique in the studies of biology is the important task of modern pedagogical science. However, for today accumulated contradictory in relation to expedience of the use of information technologies in an educational process [Рытов 2006: 186–190].

In this connection the purpose of our work was research of the use of Internet resources by students and students in studies generally and particularly at preparation to the lessons of biology at middle school and in an university.

### **1. Materials and methods of researches**

Researches conducted in January–February, 2009 by the anonymous questioning. For this purpose questionnaires were developed for schoolboys and students. A questionnaire for schoolboys consisted of the followings questions:

- 1) Do you use Internet resources during preparation to the lessons of biology?
- 2) Are there Internet resources by the most accessible information for you?
- 3) To what lessons after the level of complication does Internet resources during preparation to biology (simple, difficult, middle complication)?

A questionnaire for students was following:

- 1) How often do you use the network of Internet?
  - a) every day;
  - b) once for a week;

- c) approximately a few times per a month;
  - d) always, when possibility falls out.
- 2) For what purpose do you use the Internet?
- a) is with friends;
  - b) use of mailbox;
  - c) increase of level of professional trade of user the personal computer;
  - d) with the purpose of preparation of educational tasks.
- 3) How long do you use the Internet?
- a) one year;
  - b) more than two years
  - c) four and more than years;
  - d) more than five years
- 4) Did you at school use a pattern Internet?
- a) yes;
  - b) no;
  - c) rarely enough;
  - d) only on the lessons of informatics.

All was polled 260 students which study in 8–11 classes of Kyiv Naturally scientific lyceum 145 and 50 students of faculties of veterinary medicine National University of Nature and Bioresources of Ukraine. On the basis of questioning was created and analysed computer database.

## 2. Results of research and their discussion

The results of questioning of students and students testify that beginning from a 9 class of school students actively use the Internet for preparation to employments at school, and then and in an university. With age the particle of polled which use the Internet with an educational purpose grows. If in an eighth class only 40% students use Internet with the purpose of preparation to the lessons of biology, in 9th class already 65%, and in 10–11th class – 100%. With age proportionally the particle of children (from 35 to 90%) which perceive Internet-resources in quality the most accessible information grows also.

Schoolboys actively and sufficiently often use Internet resources for preparation to the simple themes from biology or to the lessons of middle complication. Yes, 50% students of 8th classes use Internet resources for preparation to the simple lessons, 40% – to the lessons of middle complication and only 10% at preparation to the difficult themes from biology.

For the students of 9–11th classes results some other. After the graph 9th class: simple themes of lessons – 60%, difficult – 15%, middle complication – 25%; 10th class: simple – 45%, difficult 15%, middle complication – 40%; 11th

class: simple – 40%, difficult – 30%, middle complication – 30%. It can testify that difficult for students are tasks of analytical character, and simple – descriptive. Thus, tasks of analytical character, which consist in the decision of tasks, filling of difficult tables require an independent decision. Possibly, it is difficult to get additional information students by a network for problem solving of intricate problems, and also credible is that all is needed information is in textbooks from biology.

The use of **information technologies** can take a place in number of different ways in accordance with the necessities of concrete employment, both in frontal and to group work: the use of electronic textbooks, separate types of files (image, video, audio, animations), creation of own lessons (integration of different objects in one format is presentations, web pages), multimedia, verifications of knowledges of students and students, is by testing. From data of questioning 68% students give advantage the paper carriers of data at drafting of module tasks. It can be explained both limitation in time at drafting of tests and possibility of correction of answer in a paper transmitter.

A place is important among information technologies occupies multimedia. Multimedia is an aggregate of computer technologies, a few informative environments are simultaneously in which: graphic arts, phototypograph video, picture, animation, sound-effects, high-quality voice accompaniment.

Multimedia technologies give the row of advantages:

- 1) Students and students perceive material better, the personal interest grows;
- 2) Individualization of studies, development of creative capabilities, is carried out (bringing in of students and students is to creation of electronic courses, lessons, presentations);
- 3) A.V. facilities (music, graphic arts, animations) are instrumental in enriching and motivation of studies.

Questioning of students testifies that only 11% give advantage traditional lectures. Swingeing majority from them better perceives lecture material with the use of educational films (56%) and to the sliding seat projector (33%).

Clearly, that lessons with the use of multimedia technologies need considerable preparation. With the improvement of facilities studies grow requirements to skills and knowledges of pedagogical worker of educational establishment: using the various programs is sure (graphic, by animations of flesh).

It is technically possible to organize work with resources the Internet on employments in two variants. First – students and students can work in the mode of on-line, that with direct access in the Internet, if computers provide relatively fast access in Network and load of documents does not occupy considerable part of employment. Naturally, here a teacher must check up the presence of interesting materials preliminary: servers and sites can be temporally for diverse reasons inaccessible. The second variant is more reliable – with the mediated access in

the Internet. Teacher preliminary at preparation of employment copies necessary for employment web pages in a separate folder on a school (to the university) server or even on one of accessible in a network computers.

Certainly, for today not all of schools and higher educational establishments have possibilities for providing of students and students free access to the network of Internet. From data of questioning among students every day 29% respondents use only, and subject to the condition presence of access – 45%. Students mark that during studies at school only 29% from polled were in a position of free access to the Internet, 27% were not in such position quite.

It follows notices also that for students the network of Internet – not only possibility of fast access to various information. 44% students use with the purpose of intercourse a network, that equals the percent of handlings educational aims (44%).

### **Conclusions**

1. Internet resources and information technologies - one of the most popular and comfortable facilities for preparation of both teachers and students to the lessons of biology.
2. Beginning from a 9 class of school students actively the network of Internet for preparation to employments at school, and then and in an university. With age the particle of polled which the network of Internet with an educational purpose grows.
3. With age the particle of children (from 35 to 90%) which perceive Internet-resources in quality the most accessible information grows proportionally.
4. Schoolboys actively and sufficiently often use Internet resources for preparation to the simple themes from biology or to the lessons of middle complication.
5. At drafting of module tasks 68% students give advantage the paper carriers of data.
6. Swingeing majority of students better perceive lecture material with the use of educational films (56%) and to the sliding seat projector (33%). Only 11% give advantage traditional lectures.
7. 29% students every day use a network the Internet, and subject to the condition presence of access – 45%.
8. During studies at school only 29% from the polled students were in a position of free access to the Internet, 27% were not in such position quite.

### **Literature**

Рытов Г.Л. (2006), *Инновационные методики формирования профессионально значимых качеств в процессе преподавания генетики* – Самара, № 7 (47), с. 186–190.

## **Abstract**

Research is conducted by the anonymous questioning of 260 students which study in the 8–11-th classes of Scientifically natural lyceum № 145 city of Kyiv and 50 students of faculties of veterinary medicine and aquatic bioresources National University of Nature and Bioresources of Ukraine. It is discovered, that beginning from the 9-th class of school students actively use the network of Internet to prepare for lessons at school, and later in university. With age the percentage of children (from 35 to 90%) which perceive Global Network as the most accessible information resource grows proportionally. Schoolchildren actively and sufficiently often use Internet resources to prepare for the themes of biology of simple middle levels. At the time of giving of module tasks, 68% of students prefer taking their modules on paper rather than on a computer screen. The majority of students lecture material better with the use of educational films (56%) and slide projectors (33%). 29% of students use a Internet resources everyday, and 45% accept the idea. Students note that during studies at school only 29% of the polled students had free access to the Internet, and 27% did not have this advantage.

**Key words:** Global Network, Information technologies, multimedia tutorials, educational process.

## **Wykorzystanie technologii informacyjnych oraz Internetu w procesach edukacyjnych szkoły średniej i wyższej**

### **Streszczenie**

Badania były przeprowadzone anonimowo wśród 260 uczniów, którzy uczą się w 8–11 klasach Liceum o profilu biologicznym (nr 145 w Kijowie) i wśród 50 studentów wydziałów weterynarii i gospodarki wodnej Narodowego Uniwersytetu Zasobów Naturalnych Ukrainy. Stwierdzono, że od 9 klasy uczniowie aktywnie używają sieci Internet, by przygotować się do lekcji w szkole i później zajęć na uniwersytecie. Z wiekiem procent dzieci (od 35 do 90%), który postrzega, że Internet jest najdostępniejszym zasobem informacji, proporcjonalnie rośnie. Uczniowie aktywnie i wystarczająco często używają zasobów Internetowych, aby przygotować się z tematów z biologii na podstawowym i średnim poziomie. Jednak 68% uczniów preferuje podawanie zadań modułowych na papierze niż na ekranie monitora. Większość studentów uważa, że materiał wykładu jest lepszy z użyciem projektorów (56%) i rzutników (33%). 29% studentów używa zasobów Internetowych codziennie, a 45% sporadycznie. Badania

w szkole pokazują, że tylko 29% z ankietowanych uczniów miało swobodny dostęp do Internetu i 27% było pozbawionych tej możliwości.

**Słowa kluczowe:** Globalna Sieć Komputerowa, technologie informacyjne (IT), edukacja multimedialna, procesy edukacyjne.