@ G.A. Vorobyev
Pyatigorsk, Russia
Pyatigorsk State Linguistic University
vorobyev@pglu.ru

It-culture and innovations in the informatization of a university

It is possible to mark out the following main directions in the sphere of innovative in informatization of the scientific and educational processes of a modern university:

1) informatization of the teaching process;
2) informatization of scientific activities;
3) informatization of extracurricular and distant students' activities;
4) informatization of project work.

In the sphere of the informatization of the teaching and learning process today, to our mind, it is necessary to pay attention to building a virtual educational environment of a university. But such an environment should be really innovative, either in the aspect of the technologies used or, which is more important, in the meaning of its content, filling, structure and organization. The main features of a modern innovative educational environment of a university should be integrity, flexibility, high technologies and, at the same time, the high degree of usability and friendliness to the end user.

In the sphere of the informatization of scientific activities in a modern university it is possible to mark out the following main directions:

- The access of a university to scientific services and data banks located in Internet (for example, to the system of increasing the quality of students' and post-graduates' scientific works "Antiplagiat");
- Informatization of the library;
- The access to the world digital libraries, text corpuses, scientific data banks etc. by means of Internet.

All the above mentioned directions should also be integrated into a common educational environment of a university.

In the sphere of the informatization of extracurricular and distant students' activities the main direction is the creation and application of multimedia teaching resources that can be divided into 2 main categories according to the way of application:

1) Complex digital teaching and controlling resources in the boundaries of the learning management system (LMS) in the university network (either LAN or through Internet).

There are a lot of software products in this area, but the most successful, to our mind, is LMS Moodle. The learning management system Moodle is freeware and is distributed under the license of GPL.

LMS Moodle is widely known and is used in more than 150 countries. The statistics of the distribution of Moodle is impressive: more than 40 000 sites, 19 million users, 500 000 courses. According to the level of the possibilities offered, Moodle can be compared with the famous commercial system Blackboard. "The openness" of the software lets change the system according to the peculiarities of a concrete educational project and, if it is necessary, build new modules into it.

2) Autonomous, export-oriented multimedia teaching resources.

The creation of such resources is mostly done with the help of special software – constructors of computer courses, tests and exercises.

In the sphere of innovations of the informatization of project work two main directions are marked out:

1) Project teaching and learning methods with the use of IT;
2) The realization of scientific practical and methodical IT-projects.

One of the examples of teaching projects with the use of IT are WebQuests.

A WebQuest is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web. The model was developed by Bernie Dodge at San Diego State University in February, 1995 with an early input from SDSU/Pacific Bell Fellow Tom March, the Educational Technology staff at San Diego Unified School District, and waves of participants each summer at the Teach the Teachers Consortium.

Since those beginning days, tens of thousands of teachers have embraced WebQuests as a way to make good use of the Internet while engaging their students in the kinds of thinking that the 21st century requires. The model has spread around the world, with special enthusiasm in Brazil, Spain, China, Australia and Holland. WebQuests are also getting more and more popular in Russia.

WebQuests of either short or long duration are deliberately designed to make the best use of a learner's time. There is questionable educational benefit in having learners surfing the net without a clear task in mind, and most schools must ration student connect time severely. To achieve that efficiency and clarity of purpose, WebQuests should contain at least the following parts:

1) an introduction that sets the stage and provides some background information;
2) a task that is doable and interesting;
3) a set of information sources needed to complete the task. Many (though not necessarily all) of the

resources are embedded in the WebQuest document itself as anchors pointing to information on the World Wide Web. Information sources might include web documents, experts available via e-mail or realtime conferencing, searchable databases on the net, and books and other documents physically available in the learner's setting. Because pointers to resources are included, the learner is not left to wander through webspace completely adrift;

4) a description of the process the learners should go through in accomplishing the task. The process should be broken out into clearly described steps;

5) some guidance on how to organize the information acquired. This can take the form of guiding questions, or directions to complete organizational frameworks such as timelines, concept maps, or cause-and-effect diagrams;

6) a conclusion that brings closure to the quest, reminds the learners about what they've learned, and perhaps encourages them to extend the experience into other domains.

Some other non-critical attributes of a WebQuest include:

1. WebQuests are most likely to be group activities, although one could imagine solo quests that might be applicable in distance education or library settings.

2. WebQuests might be enhanced by wrapping motivational elements around the basic structure by giving the learners a role to play (e.g., a scientist, detective, reporter), simulated personage to interact with via e-mail, and a scenario to work within (e.g., you've been asked by the Secretary General of the UN to brief him on what's happening in sub-Saharan Africa this week.)

3. WebQuests can be designed within a single discipline or they can be interdisciplinary. Given that designing an effective interdisciplinary instruction is more of a challenge than designing for a single content area, WebQuest creators should probably start with the latter until they are comfortable with the format.

Project-based learning, problem-based learning, and inquiry-based learning all three closely relate to the information processing approach. They all fit well with technology-rich learning environments where the focus is not on the hardware and software, but on the learning experience. In each case, technology is used to facilitate learning. It may be a tool of organizing ideas (such as inspiration), search for current information (such as an online news source), or present ideas (such as PowerPoint presentations). However the focus of the learning environment is the student's excitement about solving a problem or addressing an issue they find meaningful.

As for the second category of IT-projects, among many of them we would like to distinguish the projects in the sphere of virtual 3D reality, in particular, the project Second Life.

Second Life is a virtual 3D world, which is being created by the users themselves. From the moment of its foundation in 2003 till today the number of residents of Second Life has grown to several million already. About 50 000 active users from all over the world are simultaneously online in Second Life.

Second Life is a map of a virtual world, which is divided into separate segments (sims). Every sim is a property of some resident of Second Life and presents a country, city, university, supermarket etc.

In comparison with the real world, the relative size of the virtual Secod Life world can be compared with such a continent as, for example, Australia.

Such large projects as a virtual embodiment of the central district of Moscow (the code of sim – Moscow Island), Amsterdam (the code of sim – Amsterdam), Paris (the code of sim – Paris 1900), Cologne (the code of sim – Cologne), Dortmund (the code of sim – Dortmund), Poznan (the code of sim – Second Poznan) and of many other cities exist in Second Life.

Some projects concerning the creation of world famous universities in Second Life are being realized now, for example, by the Ohio University Second Life Campus. In other words, students and tutors will be able to listen to lectures in Oxford, Cambridge, Sorbonne, exchange their experience with their foreign colleagues.

The technologies of virtual reality create the 3D environment which is close to the real world and can be achieved, for example, in the process of IT-mediated teaching of intercultural communication only by means of 3D-visualization. Applying the new technology we can vividly and naturally build interrelations between things, phenomena, their reflection in the language and also express the space categories in the language, attitudes between communicants in a physical space. So the 3D technology can provide the images relevant to the national pictures of the world. Besides, by 3D modeling of a linguosocialcultural space in teaching the active role of the learner is possible, which is very important for the formation of concepts: learners get the possibility of an empirical comprehension of the world, of direct sensitive experience, of subject activity – all that can be achieved in an interactive mode of work with new technologies. Besides, new technologies give the possibility to work not only with visual, but also with sound images.

The 3D technologies give the possibility of the fullest transfer of the reality into a model. Besides, one can specify different options depending on the goals and tasks of teaching, manage the process of teaching, which is a link between a theory, an exercise and practical and professional activities.

So the innovations in the informatization in a modern university should be a high priority direction, as there are various means of its realization today and a real, didactic, motivating and technical necessity of applying innovative technologies into the scientific and teaching process.

Nevertheless, any innovations in the informatization of education should have a firm basis, which contains not only the technical and technological basis of a university, but also the highly developed IT-culture of tutors, learners and other staff.

The term "IT-culture" or "information culture" has a history of development and different definitions.

In the 1990-s in the USA and the countries of Western Europe a whole range of concepts of information literacy appeared, by which a person's ability to identify the need in information, to search for it effectively, evaluate and apply it was understood.

The great contribution to the development of the concept of information literacy was made by the American Library Association (ALA) and the International Federation of Library Associations (IFLA).

In 2002 during the 68-th session of the General

Conference and Council of IFLA it was announced about the creation of the section of information literacy, the task of which was to distinguish the standards of information literacy, formed in different libraries and countries, and about the creation of the international standard of information literacy.

In 2006 in the boundaries of the World Library and Information Congress – the 72-nd session of the General Conference and Council of IFLA- an open forum of UNESCO took place, where it was announced about the creation of a strategic alliance between IFLA and UNESCO for the realization of solutions of the World Summit on Information Society (WSIS), including the solution of the problem of information literacy.

In 2006 "The manual on information literacy for long life education" was published by the Head of the section of information literacy of IFLA Hesus Lau, in which a giant bulk of knowledge on this topic accumulated by the section during its work was generalized and analyzed.

A number of notions, relative but not synonymous to information literacy exist and are widely used in popular and specialized literature, among which are "computer literacy", "media literacy" and "information competence".

In the popular literature the computer and information literacy are often equated with each other, which is wrong. Computer literacy, i.e. the skill of working with the computer, is, of course, an important skill for a modern person, who wants to be informationally literate, but it is even not a part of information literacy, which is supposed to be a skill of working with information independently of the means of access to it, of the means of its processing and distribution.

In Russia the teaching of skills of working with information has a long history. Rich traditions and experience of working in schools, universities and libraries in preparing citizens for living in the information society are accumulated. The international experience is also well known in Russia. Nevertheless, in Russia the most widely spread concept is "information culture".

The term "information culture" appeared in Russian publications in 1970-s. The initiators of the development and popularization of the concept were the workers of libraries. One of the first works, in which this term was used, were the articles by K.M. Voykhanskaya and E.L. Shapiro.

Appearing in the sphere of the librarian and book business, the concept of information culture in the process if its development absorbed the knowledge from the whole range of sciences: the Theory of information, Cybernetics, Informatics, Semiotics, Philosophy, Logics, Culture studies, Linguistics and others.

Nowadays the information culture is more often defined as a special phenomenon of the information society. Depending on the object of viewing the notions of the information culture of society, the information culture of particular categories of information consumers (children, lawyers etc.) and the information culture of a person started to appear.

It is possible to say that information culture in the wide meaning of the notion is a combination of principles and mechanisms providing the interaction of ethnic and national cultures, their uniting into a common experience of the mankind; in the narrow meaning of the notion, it is an optimum way of dealing with information and its presentation to a consumer for solving theoretical and practical tasks.

The information culture of a person is one of the constituents of the general culture of a person, the combination of the informational world outlook and the system of knowledge and skills, providing the direct self-consistent activities catering to individual information needs with the use of either traditional or new information technologies.

The comparison of the notion "information literacy" and "information culture" of a person shows their considerable similarity. Both notions characterize a complex, multilevel and multiaspect phenomenon of interaction between a person and information. In the structure of both notions many components are distinguished: from the skill to search for information, analyze and critically evaluate the found sources of information to their creative use in order to solve various problems in learning, professional, every day or any other activities.

At the same time, the concept of information culture of a person is wider than the concept of information literacy. In contrast to information literacy, it includes such a component as the information world outlook, supposing an obligatory motivation of a person for the necessity of a special information competence.

The concept of information culture lets relate the information competence of a person to the sphere of culture, which makes it possible to provide the synthesis and integrity of traditional book (librarian) and new (computer) information cultures, to avoid the confrontation of two polar cultures – technocratic and humanitarian – in an information society.

As a whole, the differences between the Russian concept of information culture of a person and the international concept of information literacy are not of fundamental importance. They just reflect the tendency of Russian scientists and experts to combine the achievements of the international theory and practice with the traditions of the national culture and education with the existing expertise of Russian libraries and educational institutes.

The Regional scientific and educational center of IT-culture and innovations in informatization of Pyatigorsk State Linguistic University has been created in 2009 to provide for the implementation of innovations in the informatization of education and development of IT-culture of society.

The main goals of the Center are:

- popularization of information technologies and information culture among students and staff of universities, young people and specialists of the Northern Caucasus;
- the development of scientific branches in the area of information technologies;
- establishing contacts and partnership in the area of information technologies and information culture with similar institutions and universities either on the territory of the Russian Federation or abroad;
- the development of a scientific, educational and practical basis for increasing the quality of education and the competitive abilities of the graduates of PSLU;

- realization of the system of development for talented youth;
- the realization of scientific, educational, consulting activities for internal and external specialists.

The Centre of IT-culture and innovations in informatization carriers out its work in the following main directions:

- scientific activities;
- educational activities;
- practice-oriented and project work;
- internationalization in the area of IT, export oriented projects;
- cultural activities.

In the framework of the above mentioned directions the main goals of the Centre are:

- research and scientific activities in the following main directions:
  - informatization of education;
  - information culture;
  - application of information technologies to the teaching process;
  - philosophy of information technologies and others.
- publishing scientific periodicals in the area of IT;
- organizing conferences, symposia, congresses, seminars etc. of different scales (from university to international), in particular, the annual International conference "IT in Humanitarian Education";
- the development of partner relations with leading Russian and foreign IT specialists and institutions;
- the organization of student clubs of information technologies in different spheres of activities, helping students in taking part in various contests in IT, including international ones.

So we can conclude that given the modern level of technological development, the necessity of implementating innovations in the informatization of education is obvious and education should be built on the basis of the modern IT-culture of the information society.

References

1. *Dodge, B.* Some Thoughts About WebQuests. URL: http://webquest.sdsu.edu/about_webquests.html (17 Sept. 2009).
2. *Lamb, A.* Project, Problem, and Inquiry-based Learning. URL: http://eduscapes.com/tap/topic43.htm (17 Sept. 2009).
3. *Кравец, В.А., Кухаренко, В.Н.* Вопросы формирования информационной культуры. URL: http://www.e-joe.ru/sod/00/4_00/ku.html (29 July 2009).
4. Информационная культура, информационная грамотность и компьютерная компетентность. URL: http://www.ifap.ru/projects/infolit.htm (27 July 2009).