УДК 37.014

The Role of Electronic Library
in the Informatization of Modern Education

Olga G. Smolyaninova,
Larisa M. Turanova and Olga A. Pozhidaeva*
Siberian Federal University
82 Svobodny, Krasnoyarsk, 660041 Russia [1]

The role of electronic library in the informatization of modern education is presented in the article. The results of research that have been carried out on the territory of Krasnoyarsk Territory concerning Internet sources usage by students and teachers have been described. So have been the conditions of access to the Global Network in schools of Krasnoyarsk Territory.

Keywords: electronic library, informatization of education, information resources, socio-educational content.

Introduction

We consider informatization as a process of large-scale info communications' usage in all spheres of socio-economic, political and cultural life of society with a view to increase the effectiveness of information and knowledge usage in order to manage, satisfy information needs of people, organizations and state, and create prerequisites of Russia's transition to Information Society(Gould and Gomez, 2010). Informatization process involves a high-level delivery support of information resources, infrastructure development and the system of information gathering, formation, dissemination, usage and regulation of public relations occurring there. Educational informatization appears as a system of interrelated purposeful, organizational and methodical events connected with information means, technologies and culture penetration into all levels and parts of educational system (such as teaching, upbringing, supplementary education management, etc.). Thus regarding the tasks of electronic library development under the conditions of educational informatization technical availability and people's information electronic resources needs arise substantial.

Research prerequisites

The technical requirements of the Internet access support in educational institutions' of Krasnoyarsk Territory have been provided within the framework of Federal goal-oriented program "Development of uniform educational information environment for 2001-2005", national project "Education", Pilot project "Informatization of educational system", in which Krasnoyarsk Territory took part. As

---

*   Corresponding author E-mail address: opozhidaeva@sfu-kras.ru
[1]

a result of the work within the bounds of mentioned projects in every territory region a necessary technical base for the adoption of modern educational and teaching technologies has been formed, all schools for better or worse have been connected to the Internet (Griffin, 1999). Meanwhile, the results of the survey among teachers, administrative workers of educational institutions, students of several Krasnoyarsk Territory regions conducted within the framework of the project "Socio-educational content of SFU electronic library for human capital development in Krasnoyarsk Territory: conception and realization technologies" let us draw a conclusion that remote areas of the Territory are considerably limited in the access to the Internet sources; these are the areas of Far North, population places, situated at the distance of more than 200km from regional centres. In most cases the minimal speed of the Internet connection at educational institutions is 128 Kb/s with the use of such technologies as xSDL, Wi-Fi, WiMAX and what is more, with satellite link in the places where it is highly needed. Modem connection is more often used, although in the remote from the regional centre areas satellite dish links are used. The method of net connection is determined according to the facilities of a concrete educational institution – wired (over the telephone circuit), wireless and satellite methods. In spite of different technical requirements and impartial characteristics of Global network connection both teachers and students from all territorial groups mention their dissatisfaction with the stability and speed of the Internet connection, though, objectively the Internet connection in the north areas (the town of Kodinsk) is indeed beneath all criticism and it is very temperature-sensitive, while in the other under-test groups' territories there are rather appropriate technical requirements that allow to download video at acceptable speed.

Example

The teachers' and students' access depends on a chosen plan. In Kodinsk, for instance, educational institutions are confined to the limit (six thousand roubles for web traffic payment are allocated to the school a year whereas a real need is measured as 4.5thousand roubles per month). In case of unlimited Internet connection in most educational institutions teachers and students have at their disposal free access to the Internet resources. In half cases students' access to web sources is carried out under teacher's supervision, but at extracurricular time their access is not restricted to subject resources. Mostly the access of teachers and student to web resources at educational institutions is organized in a Computer Sciences classroom, in single instances there is an access to the Internet in the library or specially made media classroom.

Facilities of people's information needs satisfaction directly depend on both technical requirements of the access to electronic web resources and the level of users' information culture maturity.

Research results

Questionnaire survey has shown that teachers actively use educational web sources, the obvious champions of the most popular resources among teachers are social network websites, and some of them are "Open class", "Internet government of teachers", "Creative teachers network" and many others. More than 30 % of teachers point out the website of electronic encyclopedia Wikipedia and the website of Federal Institute of Pedagogical Instrumentation (www.fipi.ru), educational-methodical resources, that have been mentioned, indicate some spread in preferable sources. The website of the united digital educational resources collection enjoys considerable popularity among teachers from the rural educational institutions, so do the website of publishing house "1st

September" and the website of Krasnoyarsk Territory Ministry of Education. Apparently teachers are familiar to electronic libraries in a less degree, in the answers to questionnaire on electronic libraries different encyclopedia, particularly encyclopedia by Cyril and Methodius, Wikipedia and electronic dictionaries have been often mentioned. The greatest teachers' interest is caused by methodical resources, actual scientific research materials carried out in psychological-pedagogical and subject areas, materials for the supplementary education and, first of all, the programs of supplementary courses designed according the latest regulations.

Students' distribution in time spent on the Internet illustrates the Internet usage activity among students of educational institutions (Fig. 1). In the majority of country schools respondents are divided into approximately equal parts (30 % for each) in the following groups: those who spent on the Internet one or two hours, more than 4 hours, less than an hour or they just don't have Internet access, however, at the expense of city schools participants, first of all Krasnoyarsk schools, the percentage of the respondents using the Internet actively has substantially increased so that among 140 participants involved into the research only 23 % spend on the Internet less than an hour a day or don't have it, 53 % spend there approximately more than two hours a day. There is also a separate part of respondents which consists of vocational schools students the vast majority of whom don't have Internet sources access or have no need in it. Doubtless leader of the resources used by students most of all has occurred the website "V kontakte" ("*In the contact*"). It was named by more than 40 % of respondents. Portals which have search engines particularly www.mail.ru, www.yandex.ru, www.google.ru were often mentioned (about 20 % of students name them), online communities websites are rather popular with students ("Moi mir", "Odnoklassniki") ("*My world*",

"*Classmates*"). So do the website www.ege24.ru, the site of on-line encyclopedia "Wikipedia", www.youtube.ru, report websites, game and music ones, sites with e-books, celebrities fan clubs, sport websites and sites on private interests. Reasons for the Internet attendance named by the test people were the following: mail check, on-line games playing, answers connected with the Internet use for hometask preparation were present in a less degree that can be explained by the fact that the research was done in the summer time when learning motivation is hardly present. Survey participants have found hard to recall any specific web sources for students and electronic libraries.

A modern school has sufficient conditions for providing a possibility of web resources free access both for teachers and students. However, some researches depict that electronic libraries resources containing bibliographic data, electronic journals, e-books, regulatory and legislative information and study materials are not sufficiently used that influences a level of the youth information competence. On the assumption of modern researches conclusions information competence of a person is not directly dependent on the "consumed" resources and time spent on the Internet usage. A level of information competence maturity can be determined with the help of the following indicators:

- skill of orientation in the world information environment;
- to search necessary web resources;
- to work with authentic information resources and extract necessary data;
- to implement a revision of the findings and based on it to produce knowledge.

Besides, it is considered that a person must have practical skills of the work with new information communication forms and data and information distribution. Realizing the education and personal and collective literacy development

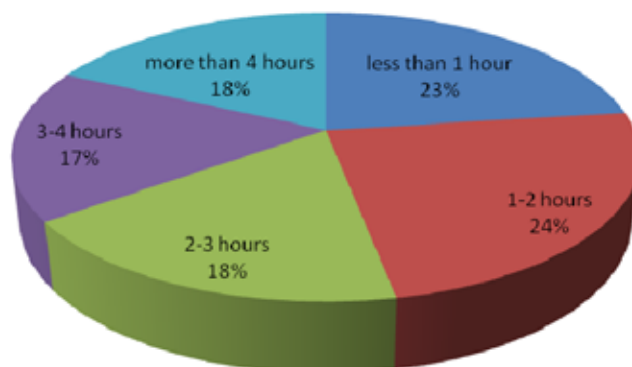## Amount of time spent by the research participants on the Internet a day

Fig. 1. Amount of time spent by the research participants on the Internet a day

purposefully, the education system contributes a creation of the information sphere that is necessary for society and includes socio-economic, political, cultural, scientific and educational components.

Nowadays the amount of available Internet web resources is rising daily and there are diverse ways of information distribution and web sources access supply. Being a powerful cultural information resource electronic library provides an educational potential, promotes broadening of the Internet user group boundaries and traditional information sources complement. It is expected that students' information competence will be formed provided that the activity with electronic library authentic resources is specially organized.

The development of a regional important electronic library with a scientific, educational and cultural content may become a task of federal university that is being a natural leader of scientific work in the region, in the long view electronic library development is to influence the speed and depth of the regional socio-economic development.

Modern electronic library is socially focused on new forms of virtual interaction.

Basic principles of activities in the network are its openness and availability for different user categories and, what is more, a possibility to use the up-to-date media technologies at information resources making. Today the electronic library space is build up not only and not so much for books but for the information work that assumes up-to-date equipment and software availability and comfortable physical environment. A new model of the Electronic library that is extensively discussed in Russian educational space calls for an adequate response to modern and forthcoming demands of information society.

The survey about needs in resources of SFU Electronic Library (SFU EL) let us find out test people's preferences which are presented at Fig. 2 and 3. Such resources as scientific, consultative, exhibition, informative enjoy the greatest popularity among teachers and administrators and as for students they are: cribs, advisory resources, ways of communication with teachers and supplementary courses.

Wishes on the content of school section of the SFU EL include the following: additional information on subjects, tasks of academic
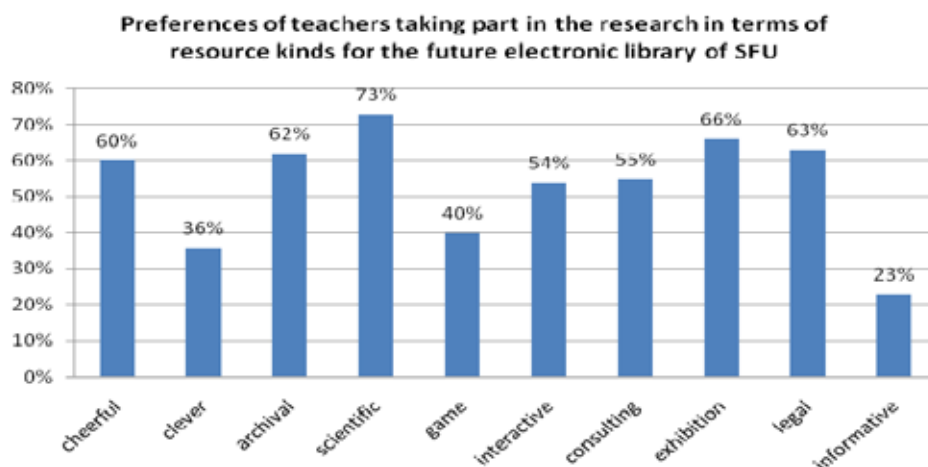
Preferences of teachers taking part in the research in terms of
resource kinds for the future electronic library of SFU

Fig. 2. Preferences of teachers taking part in the research in terms of resource kinds for the future electronic library of SFU

Preferences of students taking part in the research in terms of resource
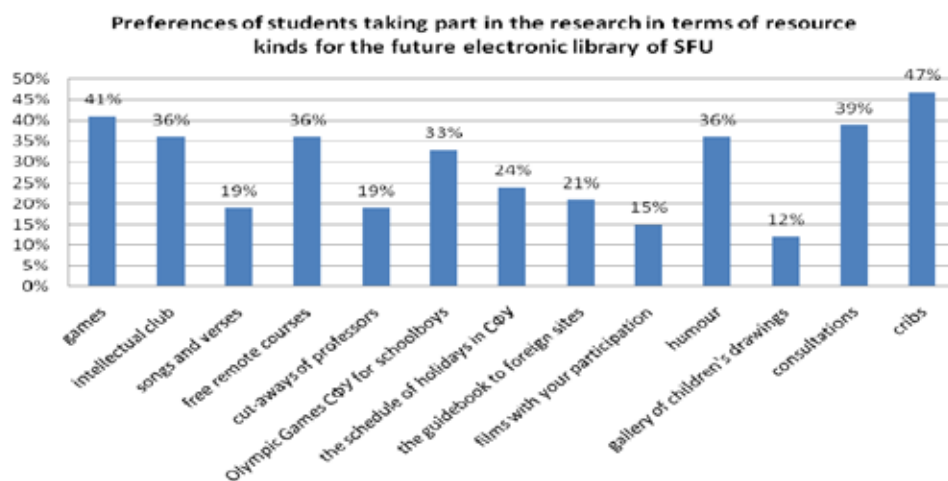kinds for the future electronic library of SFU

Fig. 3. Preferences of students taking part in the research in terms of resource kinds for the future electronic library of SFU

competition format, methodical novelties, USE tasks analysis, and materials on preparation for the university entering, digital textbooks. Teachers have suggested that the following resources are to be included in the SFU EL:

- resources just on the subject
- library of methodical and normative materials, especially there is a great interest to such materials on supplementary education system,

- students research works and their results' discussion,
- academic competition tasks analysis,
- collected papers on the results of scientific conferences,
- guidance and recommendations on students' scientific project design,
- teachers' works of authorship that passed reviewing and competitive selection (as part of regional and city competitions),

- lively and game resources for different educational levels and subjects.

Students proposed to include the following resources in the content of SFU EL:

- entertainments,
- reports and papers,
- on-line communication with teachers aimed at discussion of the literary writings.

Focus-group representatives of the research have mentioned that the most actual necessity for the SFU Electronic library is to engage such resources as audio, video and flash and have stressed that it is highly required to enlarge communication facilities of educational space participants in Krasnoyarsk Territory. At the same time they greatly emphasize the problem of interaction with SFU as an organization disposing powerful technical and scientific bases, site of breeding gifted children and talented teachers and furthermore administration and scientific-methodical maintenance for school teachers' qualifying evaluation. Despite great numbers of websites designed for the educational system some problems are still mentioned:

- shortage of made structured, cataloged annotated information and methodical support of educational process (digital educational materials, specific programs);
- lack of unified criteria and requirements for necessary documents and digital educational resources and for teachers' qualified documentation.

Conclusion

Within the framework of focus groups of pedagogical community representatives timeliness of SFU EL and its content designing for students and teachers have been noted. In the context of high significance of the factor that teachers access to the Internet and electronic

libraries resources turns out to be rather difficult the question of teachers interaction with SFU EL has gained special importance – only this way of communication provides maximum potential of the suggested communicative-educational service increase. Overwhelming majority of teachers would rather see interactive resources and scientific ones as educational content of SFU EL (Fig. 2). So we can say that scientific potential of SFU EL for human potential development and interaction is fully situated in the organization-communication sphere, as far as teachers mention their total interest in development of relationships with the higher school and only face a lack of such scientific-methodical network environment in SFU EL practice of our country and in the foreign one too. Besides interaction with SFU EL from the viewpoint of digital educational resources involvement the question of information exchange between two successive elements of educational system (school and university) appears to be of great importance. In this context the interaction of EL with students and parents (in terms of allocation of the information on potential clients) and with teachers for the purpose of mutual information exchange is believed to have prospects.

SFU Electronic Library development is connected with forming of digital educational resources fund in the field of scientific and educational programs and support of all categories of users availability and maintenance of the interest in electronic library funds at the expense of the activity organized around the electronic library in the network of communities with diverse orientations (Smolyaninova and Ryzhkova, 2010). Electronic library is an integrated system that includes a support system and a firmware complex which maintains the stable work of the search engine and provide an opportunity of EL funds stocking, registration and long-term storage, multiaspect search and

an access to the centralized and distributed EL resources. EL development will result in the rise of educational and research activity effectiveness owing to the efficient usage of digital educational resources for solving of SFU foreground tasks.

References

Gould, Elizabeth and Ricardo Gomez (2010) "New Challenges for Libraries in the Information Age: a Comparative Study of ICT in Public Libraries in 25 Countries", Information Development, 2010 26: 166

Griffin S. (1999) Digital Libraries Initiative. Phase II, Russian Digital Libraries Journal. Vol. 2, Issue 3. Retrieved from http://www.elbib//1998/199801/nsf/nsf.ru.html

Smolyaninova O.G. and Ryzhkova T.N. (2010) "Social Aspects of an Academic Digital Library: New Initiative of Siberian Federal University" Journal of Siberian Federal University 2010. Vol. 3(5). P.805-809.

Translated by Maria Tepereva

Электронная библиотека
в условиях информатизации образования

О.Г. Смолянинова,
Л.М. Туранова, О.А. Пожидаева
Сибирский федеральный университет
Россия 660041, Красноярск, пр. Свободный, 82

В статье будет представлена роль электронной библиотеки в процессе информатизации современного образования. Описаны результаты проведенного исследования на территории Красноярского края относительно использования ресурсов сети Интернет школьниками и учителями. Также описаны условия доступа к глобальной сети в школах Красноярского края.

Ключевые слова: электронная библиотека, информатизация образования, информационные ресурсы, социально-образовательный контент.