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EDUCATION FOR INFORMATION LITERACY IN CZECH TECHNICAL UNIVERSITIES

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Introduction

Czech technical universities have emerged from the more than forty years of communist domination only a little less effected than other institutions of higher learning. Since they were considered more important for the defense industry than the universities with the humanities and social sciences disciplines, they received better funding. Nevertheless, their libraries and information services remained underfunded and understaffed by western standards. And yet the information support of research and teaching is critical in today's global competition. The situation is only a little better today, mostly thanks to many progressive and hard working library professionals. In addition to the acquisition of needed information sources in both, the traditional as well as the electronic format, they are faced with the education of their users in exploiting these resources and the critical use of the Internet information.

During his sabbatical in the spring semester 2000, the author worked at the Czech Technical University Prague, one of the seven technical universities in the Czech Republic. CTU is one of the oldest technical universities in the world founded in 1717 as the Estates Engineering School. It has passed through several developmental phases until it became the Czech Technical University. In addition to the CTU, the author visited several other major Czech institutions of technical learning, namely the Brno Institute of Technology, the Institute of Chemical Technology in Prague and the Institute of Mining and Metallurgy and Technical University Ostrava.

The main topic of the sabbatical was to assist in the education of engineers in using information resources. The author has had experience from more than thirty years of serving and educating the science and engineering clientele at Arizona Sate University including one year in Saudi Arabia.

Technical Universities Library Organization

Most American universities with engineering programs are served either by separate engineering or science and engineering branch libraries, in some cases the engineering library is housed in the main library.

In the Czech Republic where technical universities exist as separate institutions, the libraries with a few exceptions (IM&M&TU Ostrava) usually reside in the respective college (fakulta) serving a particular discipline, e.g. electrical engineering, mechanical engineering, etc. Even where a "central" library exists there are still these "subject libraries" in individual colleges. Also the concept of the reference librarian/subject specialist is not being employed in the same manner as in the western, especially American library and information service practice. Again, this is the heritage of fourty plus years of neglect under the communist rule and serious underfunding of universities and in particular libraries, both in the material as well as staffing areas.

Unfortunately, this situation has not so far improved neither under the democratic governments. And yet the Czechs have to rely predominantly on the brain power to generate research, software designs, and engineering concepts to compete in today's global economy since they don't possess any major sources of raw materials. But there does not seem to be enough willingness among the decision making organs to shift resources and change this situation.

Education in Using Information Resources

Thanks to the understanding of most of the librarians and their supervisors of the importance of using information resources by students and faculty to stay abreast of the current developments, there gradually started emerging efforts to instruct these users in the utilization of electronic database, most frequently the Compendex and INSPEC.

Czech Technical University

At the CTU it was the Faculty (College) of Mechanical Engineering Library where the instruction in the use of Compendex started first, later followed by courses for different levels of users¹.

At the beginning there were offered lectures for students working on their theses later followed by a course for graduate students (Searching Bibliographic Databases then changed to Scientific Information and their Researching). This was followed by a course titled Sources of Technical Information in Computer Networks. The training in the use of Compendex started originally in 1993, mostly tailored to individual departmental needs. Later it was expanded to include searching other available CD-ROM databases. Finally it has now become a section on Information Resources within the mandatory "Computer Network Services" course.

This education in the use of information resources encompasses the library/information terminology, primary, secondary and tertiary sources of information, library catalogs, specialised databases, search strategies, importance of patent information, technical standards, citation indexes, copyright, document delivery, sources and tools of the Internet and then practical exercises on a given topic.

Institute of Chemical Technology Prague

The ICT has one of the best collections of chemical literature for their faculty and students in the Czech Republic. It also provides access to the major electronic tools like Chemical Abstracts, Crossfire Beilstein, Food Science & Technology Abstracts, Current Contents and several other sources. The instruction in the use of chemical literature runs on two levels. (2) (3) On the first level, most faculties (colleges) offer introductory courses for students in 14 sessions ranging from collection and dissemination, searching and exploitation of information, secondary information to ChemAbstracts in electronic format, Beilstein, FSTA, exploring the Internet, patent information and including seminars with a tour of the library and practical exercises. As recommended literature, Dr J Silhanek, who leads these courses, prepared several publication incl. Introduction to Chemical Information, Chemical Abstracts on CD-ROM and Guide to Crossfire Plus Reaction Database System. On the second, advanced level, the library offers specialised information courses aimed at faculty and doctoral students of training in the use of Chemical Abstracts, Crossfire Beilstein, FSTA, etc.

Technical University Brno

The TU Brno has embarked on the decision to educate users in information technologies in the early nineties. The university administration has approved the introduction of a mandatory course for all first year students (4). It is a four hour course, two hours are devoted to the introductory computing, the other two hours are dealing with the use of computers in library/information applications. The Computing Center staff teaches the first part, the Central Library librarians the second part. They teach students from all faculties (colleges) except the Civil Engineering College which is responsible for this course at their own library.

The library lectures are supplemented by a video so that the student can see a visual demo of accessing a database. Later in a practical portion the students search available databases under the librarian's supervision. The proportion of the theoretical part to the practical one is two to one. In the theoretical lectures the students are acquainted with the library/information terminology, basic concepts of search strategies and access to online library catalogs. The exercises in searching various databases are geared to the particular college subject area.

The Institute of Mining & Metallurgy & Technical University Ostrava

The situation concerning the education of library users is effected by serious understaffing by professional librarians. The central library is only a little over ten years old and does not seem to have space shortage, rather a complicated layout and lack of proper furnishings. Because of the librarians shortage the library reacts to the requests by professors and conducts orientations and lectures geared to specific classes. There is only one formal course taught by the director of the library in the Mining & Geological Faculty (college) called Informatics and Bibliography. The library attempts to reach the rest of potential library users and improve their education by designing a very informative library web page (5).

Present Situation and Future Plans

In her annual report Dr Barbara Ramajzlova, Director of Libraries at the CTU, describes the problems with the education of users (6). CTU has access to the Dialog Premier Gold Plan which makes available hundreds of databases in all subject areas but the most important for CTU users are Compendex, INSPEC and several related databases. It is here where the education of engineers in exploitation of information resources comes into play.

Under Dr Ramajzlova's leadership several grant proposals have been submitted. One, "The Concept of Information Education" was a part of a larger proposal "Contribution to the Development of Distance and Lifelong Education at CTU". The project co-directors have been Dr Ludmila Ticha and Mgr Stepanka Zizkova, both of whom have been very active in the classroom instruction of users, in particular teaching the use of Compendex.

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The new proposal by the same authors is called "Information Preparation of CTU Users" (7). The goal of this grant proposal is a work on the system of the information preparation of users, mostly students, according to the stages of information literacy. The authors realize that most students entering CTU lack the elementary knowledge needed to exploit information sources, i.e. they lack the basic stage of

preparation as users which includes information about libraries, online catalogs, document description and types of documents (primary, secondary, etc). This information will be available on the library web pages and will include basic library/information terminology. The medium stage of information literacy represents knowledge and skills that the student should possess to effectively use the information sources.

The proposed solution will exploit the possibilities of modern information and communication technologies, advise users how to access tests containing the terminology, descriptions of and recommendations how to use individual information systems, sources and services as well as the instructional programs for end user searching. The project will be useful for universities and supports clearly the tenets of the state information policy in education.

New "National Technical Library"

Along with these endeavors, the present State Technical Library which had its roots in the central library of technical universities but acquired a separate status in the fifties, has embarked on a program of building a new "National Technical Library" which will also serve the needs of both, the Czech Technical University and the Institute of Chemical Technology (8). The new library, if built as planned, will be built in the middle of the CTU/ICT campus in Dejvice. This is a very ambitious project, a library of approximately 26,800 sq m (almost 300,000 sq ft), holding about 1,100,000 volumes. The library will have 2,000 readers' stations with 1,000 PC work stations. The total number of employees will be 244. The library will combine the collections of the State Technical Library as well as the collections of the CTU & ICT libraries and also their staffs. In this respect, this library will follow the pattern used by some West European universities e.g. Technische Universitaet & Informstionsbibliothek Hannover, ETH Zurich or the Delft Technical University. These libraries serve both, their university clientele as well as the central technical libraries of their respective countries.

With the construction of this library, the students, faculty as well as the technical public will enjoy the information services they all deserve.

Conclusions

The opportunity for access to electronic databases has considerably improved in the last several years, e.g. in June Czech researchers will also have access to the Web of Science by ISI. And there are serious efforts to further improve the education of engineers in Czech Technical Universities, to increase their information literacy which will enable them to be on the cutting edge of technologies, lead by the few dedicated professional librarians. Unfortunately, the biggest obstacle is the shortage of professional staff and to a certain extent also the absence of a modern library with classrooms for instruction in the use of electronic resources. This, hopefully, should be remedied by the construction of the new National Technical Library with adequate professional staffing.

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