

EVALUATING THE USER EDUCATION

By Irma Pasanen-Tuomainen

Abstract: This Paper discusses the user education programme of the Helsinki University of Technology Library in the light of an internordic monitoring project. In the project the use of the online catalogues was evaluated by analyzing the transaction logfiles and it was evident that the end users do not exploit the various possibilities of an OPAC. A large part of the material found in the collections of the library is not retrieved: misspellings, lack of truncation inadequate use of the Boolean operators and wrong database choices all lead to ineffective retrieval. The emphasis in the online catalogue instruction has been on the "hands on" exercises and it seems that the instruction programme is not very effective in the area of subject searching. The paper presents reasons for this and discusses plans for the future development of the library user training programme.

The Helsinki University of Technology Library has been organizing user education since the early 1970's as a part of the university's curricula. The majority of the participants on these courses are students pursuing a master's degree in engineering. The user education programme of today has two main goals: firstly, to introduce the students to the modern library services and information sources so that they can use this knowledge during their studies and secondly to ensure that they, during their professional career are aware of the information services available through libraries. Today it is more than ever the task of the library to promote the awareness of the availability and accessibility of new information.

To make the students aware of how to access information the library has set up different courses presenting relevant information sources and systems. It is clear that the information needs vary according to the student's level of studies, and the instruction, on order to be effective, must follow these levels. The user education of the library aims to teach the use of the tools for information seekers.

All freshmen participate in the orientation course during their first fall semester at

Ms Pasanen-Tuomainen's paper was delivered at 59th IFLA Council and General Conference, Barcelona, Spain, 22-28 August 1993.

the Helsinki University of Technology. An introduction to the library is a part of this course and the aim is to acquaint the students with the library with a view to the fact that during their first two years the students mainly need specific course literature. Thus the emphasis in the introductory course is put on explaining the library system and the collections. Furthermore, a student is taught how to locate and borrow a specific publication with the help of the online catalogs and self service loan system. Besides a lecture the course includes hands-on training with the appropriate information retrieval system.

When a student reaches the level in his/her studies where literature concerning a subject rather than a specific publication is needed a course on information sources and systems is offered. By and large these courses are aimed to students who are either juniors or seniors preparing a seminar paper or a thesis. The purpose of these courses, which are tailored to the needs of each academic department, is to acquaint the students with different library and information services available in Finland and round the world. Techniques for information retrieval from different sources of information are presented and the exercises promote the independent use of various computer-based information sources, such as CD-ROM discs and online databases. However, the mere technique is not sufficient at this point. It is vital that the student also understands the flow of information through the different channels and can distinguish the different types of information sources. At the age of electronic information dissemination through networks, such as Internet, the issue of critical evaluation of sources will be more important than ever.

The courses described above are of a great influence in forming the basis of knowledge of a graduate engineer about the various information sources and the accessibility of information. However, after entering the professional life an engineer faces new challenges where the basis founded during the studies may not be sufficient. For those who pursue their career towards a doctoral degree the library offers a course on sources for research as part of an all year orientation course for doctoral students. The emphasis is then put on scientific information and its accessibility. On the other hand engineers working within the industry have different information needs than those in the academic environment. For this group of engineers the library arranges seminars on request and according to the wishes of the client. Then the approach may be more practical and the course concentrates more on a specific area or subject.

Running the user education programme requires both manpower and technical facilities and must therefore be included in the general evaluation of library performance. However, the basic facts concerning the quantity of students participat-

ing, the hours of given lectures etc. are not sufficient in this respect. How well do we actually teach, what is the quality of our effort in education?

Information sources and search techniques, as tools, are not a subject of an examination. To answer these questions we then used both course evaluation questionnaires and assessed the actual search technique via monitoring the interaction between the student and the OPAC.

The questionnaires had a very low response rate, less than 10% of the participants replied. The answers gave us, however a general view of the programme as seen by the students. There was no feedback about how much the students had actually learned during the course.

The user education programme for students at their 3rd or 4th year of study consists of four hours of lectures, eight hours of guided exercises and six hours of independent exercises. A three hour exercise is devoted to the TENTTU-online database system, with a brief introduction to both the databases and the search techniques within these databases. A "hands on" training follows the introduction. To evaluate the user training programme the participating students were monitored while doing their "hands on" training at the terminals connected to the library's TENTTU information retrieval system. For this study some 20 sample sessions were visually analyzed. The users at the library terminals were mainly the students of the University, and it can be assumed that the majority of them had participated in the library's course on information sources and systems. The transaction log data from the Internordic monitoring project can thus be applied here as additional information in evaluating the effectiveness of end-user instruction. During the winter 1991-1992 the Helsinki University of Technology Library participated in an Internordic study "Monitoring the Online Catalogues of the Nordic Technical University Libraries" which was supported by NORDINFO¹. The aim of the project was the promotion of end-user accessibility to information in OPACs by gathering valid information about the user interaction with these systems. The transaction log files of the monitored end-users at the library terminals during the Internordic study revealed that the different search possibilities available in an OPAC are exploited to a minimal extent.

Free text searching dominated all the 12800 search queries at the library terminals during the four week monitoring period. Queries in the author and title fields, typical "specific item searches" were apparent in close to 1/4 of the searches. Classification was used in 259 queries only. The words appearing in searches were mainly in English or in Finnish. Assumptions were that if classification is not used in subject searching the language barrier is overstepped with synonyms in different languages. When this was not the case, the limited use of classifica-

tion in searching has more serious consequences. In a database that consists of 65% of the materials in English and in Finnish this means, in fact, that more than one third of the collection turns into grey literature in an OPAC.

The Boolean operators were used approximately in every fifth search statement and the most frequently applied combining operator was AND: Truncation was used in 60% of the search elements. This is a far greater proportion than found in other studies.^{2,3} This stems from the fact that the structure of the Finnish language, where no prepositions exist but some 15 cases can be applied to the stem of a word. This has resulted in the wide application of the truncation at the end of a term. Curiously enough the amount of searches resulting in no records retrieved, i.e. empty sets (no hits!) seems to be a similar figure of the user group or retrieval system. Some 30-50% of all search queries seem to result in an empty set^{1,2,3}. These empty sets, however, do not mean necessarily that the search is failed as in a question of a specific item search it merely informs the user that the item is not in the collections of the library. On the other hand the transaction log file analysis revealed that at the library terminals of the Helsinki University of Technology there were also a great number of misspellings and wrong field code definitions given, all leading to unsuccessful searches. Especially the author names were often misspelled. Browsing the author index would naturally eliminate this problem.

Our main concern with the user instruction programme was therefore the education in the technique of conducting a subject search in a multilingual database. Also, the use of the index browsing, the scan command, was to be examined. From the findings at the library terminal we could assume that the students knew how to truncate and to combine, at least to some extent.

The two exercises at the "hands on" practice are of different structure. The first exercise aims to teach the student to choose the right database and apply the appropriate field codes. It can well be characterized as a typical specific item search. The other exercise, however, lets the student choose a topic of his own interest and a search in the online catalogue (TENTTU Books database) must then be conducted using both terms and the appropriate classification. The sample searches monitored revealed that the first exercise was usually conducted with care and the required answer was found, whereas the second exercise was more carelessly conducted. For example, some students did not view their records in this exercise, to check whether the references actually were about their subject of interest. On the other hand, besides being evident that they indeed used the classification, it was also evident that the terms they used in this exercise were Finnish and in English only. The browsing of indexes was not included in the

exercises and therefore the promotion of the facility was made only orally by the instructor.

The majority of the students at the library terminals could be assumed to have participated in the library's course on information sources and systems. The inevitable conclusion is that the instruction programme is not very effective in the area of subject searching. There are several reasons for this, such as the complex way of conducting a subject search, the ill-formed exercise related to subject searching and the fact that the exercise is conducted by a person who actually classifies the material in the library. Indeed, all these issues relate to the eternal dilemma of all education: how to determine the essential that is worth learning. The needs of an end-user are still quite often determined by the librarians.

The conclusions of the evaluation together with the rapid pace of development in information dissemination have lead us to reorganize the user training programme. It was previously reorganized in 1987, when Internet was still unknown and inaccessible to most of us. All new technologies require new skills before they can be used efficiently and therefore the revised user education programme will include the use of electronic mail as a standard was of communication as well as exercises concerning the use of Internet.

On the whole all the exercises will be more precise allowing no shortcuts, such as those experienced with the monitored exercises. There will be more attention paid to the search on the OPAC and scan functions. Furthermore, the use of electronic mail in returning the exercises requires more unambiguous answers. The revised user education programme gives the students more freedom in choosing the time and place of doing the exercises. However, for those who do not want to or cannot use the remote online access while doing the exercises there will be a person dedicated to help them at the library.

References

1. Høy Nielsen, I., Lomheim, I., Pasanen-Tuomainen, I. Monitoring Online Catalogues (OPACS) in the Nordic Technological University Libraries. NORDINFO, Espoo, Finland 1992. Nordinfo publikation 23. 85 p.
2. Borgman, Christine L. Why are Online Catalogs Hard to Use? Lessons Learned from Information-Retrieval Studies. *Journal of the American Society for Information Science*, vol. 37, no. 6, 1986, pp. 387-400.

3. Peters, Thomas A. When Smart People Fail: An Analysis of the Transaction Log of an Online Public Access Catalog. *The Journal of Academic Librarianship*, vol. 15, no. 5, 1989, pp. 267-273.

Irma Pasanen-Tuoainen
Helsinki University of Technology
Library-Information Services
Otaniementie 9
SF-02150 Espoo
Finland