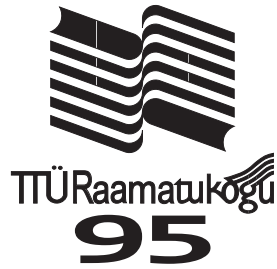
TALLINNA TEHNIKAÜLIKOOLI RAAMATUKOGU TÖID A6

TALLINNA TEHNIKAÜLIKOOLI RAAMATUKOGU TÖÖTAJATE UURIMUSI JA ARTIKLEID

2009–2014

TALLINN 2014


TTÜ Raamatukogu
95

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SAATEKS

2014. aasta detsembris tähistab Tallinna Tehnikaülikooli Raamatukogu oma 95. aastapäeva, mille puhul ilmub käesolev kogumik raamatukogu publikatsioonide A-sarjas. Kogumik kajastab valikut raamatukogu töötajate viimase viie aasta ettekannetest, artiklitest ja uuringutest, andes seega ülevaate sel perioodil raamatukogu teadus- ja arendustöö vallas tehtust. Enamik kogumiku materjalidest on inglise keeles, mis on sündinud raamatukogutöötajate rahvusvahelistest kontaktidest ja koostööst. Eestikeelsed kirjutised on varustatud ingliskeelse sisukokkuvõttega.

Kirjutised käsitlevad:

- raamatukaubandust, selle arengusuundi ja vorme Eestis 19. sajandi lõpul ja 20. sajandi algul (Signe Jantson);
- TTÜ Raamatukogus väljatöötatud IT-põhiseid tarkvaralahendusi: infokioski tarkvara, külastusi registreeriv väravaprogramm, avakogude inventuuri tarkvara (koostöös AS ID-Baltiga) (Jüri Järsi ettekanne IATUL-i aastakonverentsil Espoos, 2014);
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- TTÜ raamatukogu ainespetsialistide (referentide) süsteemi ja selle arenguid läbi aastakümnete (Gerda Koidla ja Taimi Nurmiste ettekanne Riia Tehnikaülikooli Raamatukogu 150. aastapäeva konverentsil, 2012);
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- 2012. aastal TTÜ Raamatukogus läbiviidud lugejate rahulolu uuringut (Aiki Tibar);
- TTÜ õppejõudude ja teadurite infootsikäitumise uuringut 2014. aastal (Aiki Tibar).

Toimetajad

PREFACE

The Tallinn University of Technology Library celebrates its 95th anniversary in December 2014. To celebrate this occasion the library presents the serial publication „Studies and Articles by the Staff of the Tallinn University of Technology Library 2009 – 2014". The edition contains selected papers, articles and studies of the library staff for the last five years, therefore giving the overview about the research and development activities of the library. Most of these published materials are in English and are mainly a result of cooperation with colleagues and international contacts. Estonian language articles are provided with summaries in English.

BOOKSELLER, PUBLISHER AND PRESS WORKER IN THE SECOND HALF OF THE 19TH – AT THE BEGINNING OF 20TH CENTURIES IN ESTONIA

Signe Jantson

TUT Library, Head of Department of Bibliography

Abstract

The article handles general developments and changes in book trade and book publishing which took place in Estonia during the second half of the 19th century and at the beginning of the 20th century. The aim is to show the formation of bookshops trading with Estonian books, to analyse the activities of Estonian booksellers as publishers and their role in publishing the Estonian language books.

This paper is based on the retrospective national bibliography of Estonian books that were published from 1850 to 1917, on research literature and on the data collected by the author for her doctoral thesis.

Books, newspapers and journals in the Estonian language had an important role in forming the self-awareness and in the development of the national culture. The number of printing offices and bookshops grew fast. With every year more and more Estonian language books were published. The average of publications per year became tenfold by the end of the period. Books were published for the most part by printing houses, bookshops, different societies and authors. The number of persons who were engaged only in publishing books was small.

During the period 1850–1917 a total of 263 bookshops were founded and 283 persons became bookshop owners, at least for a few years. The book trade was a popular sphere of activity, but did not guarantee a sufficient income and bookshop owners were often engaged in other book-related spheres, mainly in book production and publishing. Among the 283 bookshop owners 83 were engaged in publishing.

According to the retrospective national bibliography, booksellers published 3210 books and brochures, which constituted 22.7% of the total book production of the period. The most active period of booksellers as publishers was between 1880 and 1900. Booksellers who started their activities during this period published a total of 1949 different printed items. Booksellers whose activities started after 1850

published 688 books, but most of these (549) were published by Heinrich Laakmann. Booksellers-publishers whose activities started after 1901 issued the smallest number of books (73). However, this does not mean that booksellers lost their importance at the beginning of the 20th century, because booksellers who had started their activities earlier still continued working during this period.

Keywords

history, 19th century, Estonia, book trade, publishing, booksellers as publishers

Book production and publishing of Estonian language books

In the second half of the 19th century, the socio-economic and cultural situation in Estonia changed dramatically. The Estonian people, who had reached a new level of self-awareness, were faced with a need to establish the foundations of an open national culture. The education provided by schools and the general world outlook were reformed to add breadth and diversity. A very important role in this process was played by books and newspapers. Their content and distribution reflect in the best way the development of the national culture.

The improvement of the educational system favoured the spread of literacy which in its turn gave rise for demand of books. The rate of literacy in the Baltic provinces was very high comparing with the other provinces of the Russian Empire. According to the results of the 1897 census, 91.2% of the Estonian population was literate, the corresponding figure for Latvians was 80% and for Lithuanians 54%; at the same time the literate population in Russia was estimated to be only 30% and in Ukraine 28% [8, 86].

The growing need for reading lecture inspired people to engage themselves in book production and book trade. The Printing Decree adopted in 1865 simplified the procedures to establish printing houses. The results of these processes were soon reflected in the growing number of enterprises – in Estonia the number of printing houses grew from nine in 1861 to 20 in 1880 [10, 137-138].

The average of the Estonian language book production per year more than decupled: if during the decade 1850–1860 on an average 38 Estonian books were published per year, then in 1911–1917 the average production per year had increased to 632 books. The total circulation figures of books published 1850–1917 exceeded 43,6 million with the average circulation of 3350 copies [7, 183].

By 1913, Estonia held a considerable place in Russia both in terms of publishing and of distribution of books. In 1910, book production in the Estonian language was in 6th place in Russia after books in Russian, Polish, Jewish, German, and Latvian. Among the 16 biggest Russian publishing towns which issued 96% of all book pro-

By content, printed works are classified as follows:

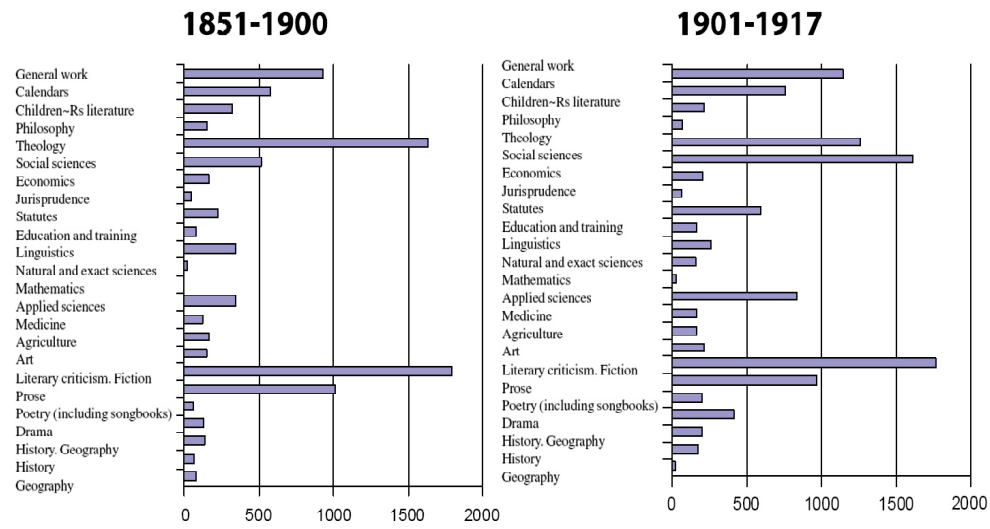

Chart 1. Printed works classified by content [3; 63]

duction (including St. Petersburg and Moscow which together published 75% of all books), Tallinn held 9th and Tartu 14th place in 1910–1912 [8, 90].

Until the last quarter of the 19th century books in the Estonian language were for the most part published by printing houses, which means that printing house owners financed the publication out of their own pockets. The most important publishers of Estonian books during the period 1860–1890 were Heinrich Laakmann and the Schnakenburg family in Tartu. When the book production and the number of bookstores increased, publishing began to separate from printing step by step. In addition to printing houses, booksellers started to publish books in the last decade of the 19th century as well. Booksellers took their place as publishers next to printer-publishers and eventually printing houses became little more than companies fulfilling the orders of publishers.

Still, the picture regarding publishing is not quite clear as numerous books do not have any note on the publisher (the person who covers the expenses). However, the number of people dealing only with publishing was still small. In turn of the 19th and 20th centuries only A. Ginemann and Jakob Hermann Vahtrik in Tallinn were active in this field. Organisations such as the Society of the Estonian Literati and Estonian Students Society were also engaged in publishing. However, publishing became an independent business only at the beginning of the 20th century [10, 150-151].

The best known publishers in the last decades of the 19th century were Ado Grenzstein, the editor of the newspaper Olevik, who founded a bookshop in Tartu in 1882, and August Busch, who acquired the business of Alexander Eduard Brandt in Tallinn. In addition to Grenzstein, the most important publishers in Tartu in the second half of the 19th century were Martin Vares and Wilhelm Adolph Just. The best known publishers at the beginning of the 20th century were Jakob Ploompuu and Gustav Pihlakas in Tallinn [10, 151].

Despite the fact that bookstores and printing houses were found in all smaller towns, the publishing houses were situated mainly in Tartu and Tallinn. During the 19th century, the purchasing power of Estonian readers was still small and the publishers conformed to the purchasing power of readers. Thus, to reduce the book prices, the books were thin, paperback, and printed on cheap paper.

The impressions of books were rather large. For example, the calendar compiled by the publisher Mats Tõnisson could be found in every other family. As the number of titles increased, the impressions started to lessen. The number of purchasers did not increase proportionally with the growth of titles which means that the number of new purchasers was smaller than the number of new titles. The selling period of books was rather long, sometimes even 20–30 years [8, 88-89].

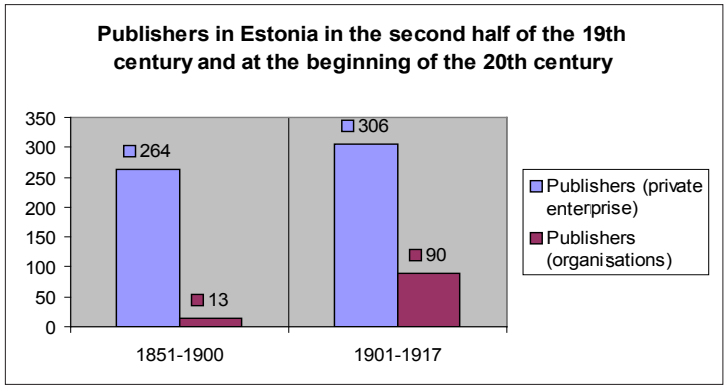

Chart 2. Publishers in Estonia in the second half of the 19th century and at the beginning of the 20th century

The annual quantity of publications in Estonian increased constantly in the second half of the 19th century. A remarkable number of people were engaged in publishing in 1851–1917: about five hundred persons and about a hundred organisations have been mentioned as issuers of publications in Estonia in the retrospective bibliographies *Estonian Book 1851–1900* and *Estonian Book 1900–1917*, compiled by Endel Annus. During the both periods only 45 persons could maintain their occupation.

In addition to publishing houses, books were also issued by private persons and their share was relatively large. However, many of them published only a couple of books. Several educational and cultural organisations, such as *Edu* [Progress], *Haridus* [Education], *Kultura* [Culture], also dealt with publishing. The number of organisations who dealt with publishing started to increase in the 20th century, when publishing houses that issued newspapers and journals, such as the publishing house of the journal *Eesti Kirjandus* [Estonian Literature] and the publishing house of the newspaper *Postimees* [the Postman] started book publishing.

Booksellers as Publishers in the Period of the National Awakening Movement, 1860–1880

In 1860s the number of bookshops and printing houses started quickly to grow. If during the eralier period the bookshop owners were mainly Germans or persons of Baltic German origin, then gradually the book trade and printing undertakings went over to the Estonian owners. In 1867, Heinrich Laakmann, a publisher and printing shop owner of German origin in Tartu, opened the first bookshop to sell Estonian-language books; in Tallinn, such a shop was opened in 1872. Altogether, during the period of the National Awakening movement, 39 new bookshops were opened and 45 persons were engaged in selling books. By the end of the period, most bookshop owners were of the Estonian origin [6, 71-74].

The business activities of booksellers in the second half of the 19th century were diverse.

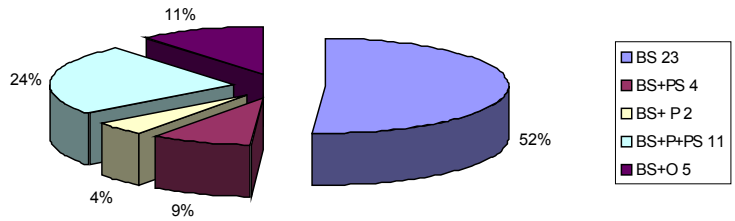

Chart 3. Business activities of booksellers who started book trade in 1851–1880 (BS-Bookshop; PS-Printing Shop; P-Publishing house; O-Other occupation)

The statistical data show that almost a half (48%) of the 45 booksellers who started book trade during the period of the national awakening movement was active in several areas: 13 bookshop owners were involved in publishing (P) and 15 booksellers owned printing houses (PS). Some booksellers were also active in other areas (O) such as journalism, photography, trade, agriculture, banking etc [5, 115-116].

The most important publishers of Estonian books during the period were Heinrich Laakmann (1802–1891) and the Schnakenburg family in Tartu.

Heinrich Laakmann was born in 7 October 1802 in Lübeck. He started in book business in 1816 as an apprentice in L. Römhild's printing house, in 1826–1827 he worked in Paris in Firmin Didot's printing house. His first visit to Tallinn took place in 1832 on invitation of the local print shop owner Friedrich Montag, with whom he had made friends during his journeyman years. Laakmann failed to get printer's job in Moscow and instead he was for some years a private teacher in Moscow. After the death of his friend in Tallinn, he rented the Montag's printing house *Lindforsi Pärijad* [Lindfors' Heirs]; in 1837 he opened the branch office in Tartu and in 1840 became an independent undertaker under the name of H. Laakmann's printing house [9, 104-106].

Laakmann was the most successful entrepreneur, as his company owned a printing house, publishing house and, from 1867 on, also a bookshop [10; 148-149]. The publishing house of Laakmann published approximately 30% of all Estonian books published between 1860 and 1880. His most popular publication was the calendar *Maarahva Kasuline Kalender*, a periodic publication with useful tips for household. A large number of the books published by Laakmann were textbooks, such as *Kooli lugemise raamat I-III* [School reading-book], a book that taught reading skills, and the geography book *Väike geograafia* [Little Geography]. The books he published also included numerous popular and religious books, as was characteristic of the spirit of that era [1; 12].

In the last quarter of the 19th century, the Schnakenburg family emerged as another remarkable publisher of Estonian books by continuing and expanding the publishing activities of printers and publishers Eduard Julius Karow and Wilhelm Gläser, whose printing house and lithographic printing office they acquired in 1875. Conrad Edmund Heinrich Schnakenburg established the printing house first in Riga in 1859, Tartu enterprice was managed by his sons Ludwig Heinrich and Heinrich Emil, later by his daughter Emilie Constance [4, 465]. Schnakenburg's publishing house produced several books of high literary value (such as reprints of the Estonian national epic *Kalevipoeg*) and, as did Laakmann, he also published many schoolbooks and calendars [10, 156].

The first Estonian bookseller and publisher in Tallinn was Aleksander Eduard Brandt, who founded the bookshop and started the publishing business in 1879 [11, 146]. Brandt published relatively little, mainly popular books. The publication business took off when the bookshop passed to Busch, who soon started publishing mostly fiction, but also dictionaries, spiritual books, plays, songbooks etc [10, 157].

The main publisher of the literature in foreign languages was the book store of Kluge & Ströhm in Tallinn.

During this period publishing was still closely connected to printing houses. Booksellers mostly published best-selling items, such as calendars, text books and fiction.

The Period of the Russification Reforms, 1880–1900

Russification reforms had no visible consequences on book publishing and book trade. Numerous new bookshops were opened in Tallinn and Tartu, as well as in smaller towns. During the last two decades of the century, 119 persons were engaged in selling books and 104 new bookshops were opened. Majority of these shops were in business for a short time, less than five years [5; 57].

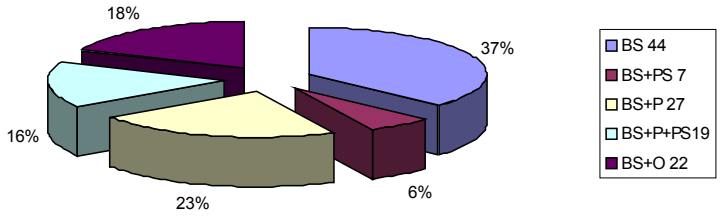

Chart 4. Business activities of booksellers who started book trade in 1881–1900 (BS-Bookshop; PS-Printing Shop; P-Publishing house; O-Other occupation)

The number of booksellers operating in several areas increased compared with the earlier period. Seventy-five of the 119 bookshop owners who started their businesses in the last decade of the 19th century, sold a variety of goods, and 46 booksellers were also publishers. Nineteen persons and seven companies owned in addition to a bookshop also a printing house. Twenty-two booksellers held other jobs: they were teachers, journalists and town clerks (Chart 4). The number of booksellers-publishers increased considerably during the period, whereas the number of booksellers-publishers-printing house owners decreased [5; 79-80].

The publication of books increased compared to the years 1840–1850 tenfold. The average of the Estonian language book production increased to 173 between 1880 and 1889 and to 274 between 1890 and 1900.

The most successful businessman of the period still involved in other areas besides the book trade was the journalist Ado Grenzstein (1849–1916), the editor of the newspaper Olevik, who founded a bookshop in Tartu in 1882, and August Busch, who acquired the shop of A. E. Brandt in Tallinn [10, 150-151].

Ado Grenzstein was born in 5 February 1849 in Tarvastu in South Estonia. He studied in the years 1871–1874 in Valga Schoolteachers' Seminar and since 1876 was a

teacher at Hollmann's Teachers' Seminar in Tartu. In 1878–1880 Grenzstein continued his education in Pedagogical training college in Vienna. In 1881 he founded the newspaper Olevik [Presence] and was its publisher until 1901, a year later Grenzstein opened a printing house and in 1884 a bookshop in Tartu. In 1901 he left Estonia, lived first in Dresden and then in Paris [4, 71].

Grenzstein was a many-sided man of letters. He wrote poetry and political essays, compiled text-books and put together the first Estonian language chess instructions. He enriched the Estonian language with the word 'publisher' in 1884.

In addition to Grenzstein, the most important publishers in Tartu were the booksellers Martin Vares and Wilhelm Adolph Just; in the last decade of the century Mihkel Hermann and the poet Karl Eduard Sööt started publishing. The activities of the latter continued into the 20th century and the products of his publishing house, a total of 102, included many valuable books. In addition to his own poetry he put together the first anthology of Estonian poetry, published popular books and children's books. As a publisher, K. E. Sööt paid attention both to the content and appearance of books.

Booksellers in smaller towns also started publishing during this period: Reinhold Põder in Narva, Adolf Seidelberg in Paide, Nikolai Erna in Rakvere and Hans Leoke in Viljandi. The latter specialised in theatrical literature and published a series containing 234 plays [10, 153].

The Beginning of the 20th Century, 1901–1917

The beginning of the 20th century was due to the crucial political events not favourable for book production and distribution. The first year of the World War I did not reflect in numbers – in 1914 still 652 Estonian language books were printed. After two years the publication number decreased considerably and in 1916 only 318 books were printed [2, 9]. The number of new bookshops increased during the first decade of the 20th century and fell during the years of war. Altogether 119 bookshops were opened during the period, but the majority of shops were closed in a short time [6, 64-65].

The number of book shop owners (51) who operated in several book-related areas was somewhat modest compared to the total number of those who started in this business (119). There were five booksellers-printing house owners, 16 booksellers-publishers and eight booksellers-publishers-printing house owners. Altogether, 24 booksellers were engaged in publishing. Twenty-two people had other jobs besides being booksellers, but considering the relatively short lifetime of bookshops, it can be assumed that the job of bookseller was a brief diversion for people of other professions. Being both a teacher and a bookseller was the most common combination

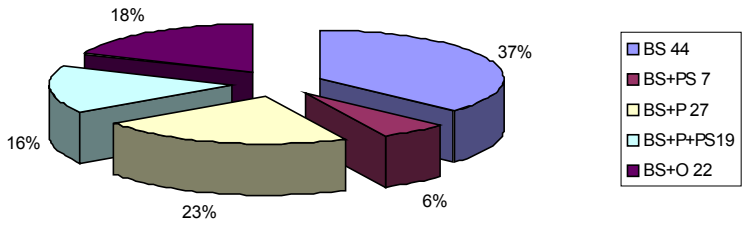

Chart 5. Business activities of booksellers who started book trade in the first decades of the 20th century (BS-Bookshop; PS-Printing Shop; P-Publishing house; O-Other occupation)

(with eight known cases) [6, 81]. However, the activity period of bookshops that were opened at the beginning of the 20th century was generally very short, which means that many of their owners never had a chance to expand into other areas [7; 187].

The best-known bookseller-publisher, who worked in Tallinn at the beginning of the 20th century, was the journalist and publisher Jakob Ploompuu (1872–1948), who by 1913 had risen to the top of the list, with an annual production of 4197 pages [10, 151].

Jakob Ploompuu was born in 11 October 1872 in Kõvasoo village in North Estonia. He worked as a translator since 1894 and as a journalist since 1897; he published the almanac Rahva Leht [Peoples' Leaf] 1896–1916 and different calendars. In 1900 he opened a bookshop in Tallinn and became a full time bookseller and publisher. In 1905 he also founded a lending library by his bookshop. Altogether he published some 600 different titles. Ploompuu published mostly books by Estonian authors, textbooks, dictionaries and the popular literature. One-third of his publications were children's books of rather unimpressive content, although they were colourfully illustrated [3].

Gustav Pihlakas (1864–1937) was the second major publisher in Tallinn at the beginning of the 20th century.

Gustav Pihlakas was born in 17 February 1864 in Mäepea village in North Estonia. He was engaged in book business at a very young age in the firm of his uncle Tõnis Pihlakas, who was a bookseller and a publisher. Already in 1879 Pihlakas became an independent travelling bookseller who sold books all over the North Estonia; in 1880 he started with book publishing. In 1898 he opened his own bookshop in Tallinn and later the printing house in Narva. Pihlakas focussed mainly on works by Estonian authors (including those of Ed. Vilde), but later he also published school-

books, popular science literature and various handbooks on health care, treatment of animals, gardening, cookery etc [10; 155].

Although publishing activities were mainly concentrated to bigger towns, there were some bookseller-publishers also in the countryside, for example Jüri Reimann in Kilingi-Nõmme.

The number of publishers compared to the number of booksellers was not large, the most important publishers were also booksellers, indicating that publishing was still a relatively important field of operation for booksellers.

Conclusions

In the second half of the 19th century and at the beginning of the 20th century book publishing or book trade as separate spheres of activity did not guarantee undertakers sufficient income. Traditionally the persons who were engaged in book production and distribution combined one sphere with another and worked as printers-publishers or booksellers-publishers. Among the 283 bookshop owners of the period 1850–1917, 38 headed companies comprising of a publishing house, a printing office and a bookshop; 45 persons were engaged both in publishing and the book trade, while 16 were involved in both printing and the book trade. There were also school teachers, parish clerks and people of other professions, altogether 49 persons, who traded in books [5; 83]. Analysis of the activities of booksellers shows that 83 booksellers were engaged in publishing between 1850 and 1917 [7, 188].

According to the retrospective national bibliography, booksellers published 3210 books and brochures, which constituted 22.7% of the total book production of the period.

The most active period of booksellers as publishers was between 1880 and 1900. Booksellers who started their activities during this period published a total of 1949 different titles. Booksellers whose activities started after 1850 published 688 books, but most of these (549) were published by Heinrich Laakmann. Booksellers-publishers whose activities started after 1901 issued the smallest number of books – 73. However, this does not mean that booksellers lost their importance at the beginning of the 20th century, because booksellers who had started their activities earlier still continued working during this period. These figures lead to the conclusion that the book trade was a popular, but not a profitable, sphere of activity. Most successful were individuals who were active in several fields of the book business: publishing, printing and trade.

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IT-BASED SOLUTIONS FOR USERS AND LIBRARY STAFF: CASE STUDY OF THE TALLINN UNIVERSITY OF TECHNOLOGY LIBRARY

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Abstract

The new building of the Tallinn University of Technology (TUT) Library was opened in 2009. It has open stacks of about 210 000 volumes, which are located on 4 floors. The library has 32 study rooms and about 1 500 visits per day. In this paper some unique solutions are introduced, which have been worked out in cooperation between TUT librarians and library IT staff.

Information kiosk. One single access point for searching in e-catalogue ESTER and ISE database, topographic Open Stack Guide (OSG), study rooms reservation system. OSG is integrated with ESTER item records. There are two ways to find the item location in open stacks: starting from ESTER or starting from OSG. For the response the shelf of location will be shown on the floor map.

GateKeeper system. Registration of visits at the entrance gate. Patrons can use the library card with bar code or Estonian ID-card. Integrated with patron database, which allows real-time verification of patron status. Statistical reports about the visits and visitors in any combination of patron data and chronological limits could be produced.

Inventory of open stacks. The necessary set of records (based on call numbers) is generated from ESTER and loaded to mobile terminal. Using mobile terminal with bar code reader it is easy to scan the set of items. If the item is not on the right place the terminal gives an alert. Eventually the report of absent items will be generated.

Keywords: web-based applications; topographic access to open stacks; reservation of study rooms; visits registration and statistical analysis; inventory of open stacks.

Introduction

The primary goal of TUT Library (founded in 1919) is to provide information for academic, research and development activities of the university. As a public research library, public services to readers outside of TUT are also offered in the field of technology, exact, natural, health, and social sciences. Beside of traditional library, information, consultancy, training, binding and publishing services, the development of unique IT-based solutions has also been of a great importance for the Library since the technology became obtainable.

Some milestones in using and developing IT-based solutions

First steps were made in 1977 when Library started data processing in TUT computing centre on Soviet mainframes using self-developed PARES software application. There was no online connection between the Library and computing centre. The data about the users, their loans and refusals were entered manually via special input device with magnetic tape and then transported to the computing centre. The goal was to study the book collection as a hole and to specify the user needs. As a result we got statistical analysis of the usability of books by UDC, language, type, user education, faculty and occupation. There was much manual work for generating the input, but not so much real benefit of the results.

The new promising era was opened when personal computers and local area networks became available. In 1987 training courses for librarians were organized and TUT Library periodicals database was created using dBASE III Plus software. The requirements for integrated information system were specified and the strategic development plan was compiled at the same year. Unfortunately there was no financial possibilities to buy any commercial software product and it was decided to use Micro-CDS/ISIS software of UNESCO for working out local solutions. In 1991 the database „Estonian Technology and Economics“ (articles with abstracts) was created, in 1993 the database of TUT publications was created and in 1995 the database of TUT lecturers and researchers (short biographical data) was created using Micro-CDS/ISIS. The circulation module of CDS/ISIS did not perform correctly in local area network with many concurrent transactions and we reached a conclusion that we need more stable software solution. In 1996 the first Library web site and web-based application for local e-catalogue were worked out using MySQL open source database. It had the UNICODE (UTF-8 encoding) support, which was especially important for using Estonian, English and Russian character sets simultaneously.

Thanks to the support of Andrew W. Mellon Foundation INNOPAC (Innovative Interfaces Inc., USA) integrated library system was implemented by Estonian research libraries in 1999. It was our first commercial software product and allowed

us to create contemporary shared e-catalogue ESTER and ISE (Index Scriptorum Estoniae) articles database. At present ESTER is based on Millennium software and it is planned to change it to the next generation Sierra platform this year.

In 1998-1999 TUT Library participated in EU DEDICATE (Distance Education Information Courses based on Access Through Networks) project, which gave us knowledge, inspiration and tools for working out web-based user training environments. The web-based information retrieval courses have been on use since year 2000 and their software has been modified and upgraded year by year. For facilitating the use of open access resources „Subject Gates" application was worked out in 2000, which included more than thousand classified and arranged links in 10 subject areas.

Open Access Institutional Archive „Digikogu" was created in 2005 using Linux, Apache, MySQL and Php. It consists doctoral theses defended in TUT, textbooks, reports of research activities, library publications, historical technical journals and documents, etc. In 2012 the new platform for TUT publications was created using MS SQL database and the records from CDS/ISIS were converted and loaded into new environment.

Current background

The new building of TUT Library was opened in 2009. It has total floor area 7 200 m^2 and open stacks of about 210 000 volumes on more than 1 600 shelves. There are no walls and separated reading rooms, the patrons area is like one open space, which extends through four floors. The shelving system is based on Universal Decimal Classification and has about 1 300 subdivisions. There are about 500 seats (including 100 with computers) in the building. The use of computers is supported everywhere with WiFi, power and network sockets. The patrons with their own laptops can borrow additional equipment (big display, number keyboard, mouse, ID-card reader, scanner, headphones). Many self-services (check-out and check-in equipment, printers, scanners, copy-machines) are available for the users. It is also possible to order services from bindery, publishing office and Print-On-Demand digital production line. Library regulations, services and news are introduced via information TV system. All visual information is available in Estonian and in English. There are 6 group study rooms and 26 individual study rooms in the library, which are very popular among the patrons. All the building is accessible for the people in wheelchair, special equipment (reading TV, scanner with audio output, Braille printer) for persons with visual deficiency is available.

The Library has more than 33 000 patrons (including 17 000 outside TUT) and about 1 500 visits per day. The user population is very international – we have pa-

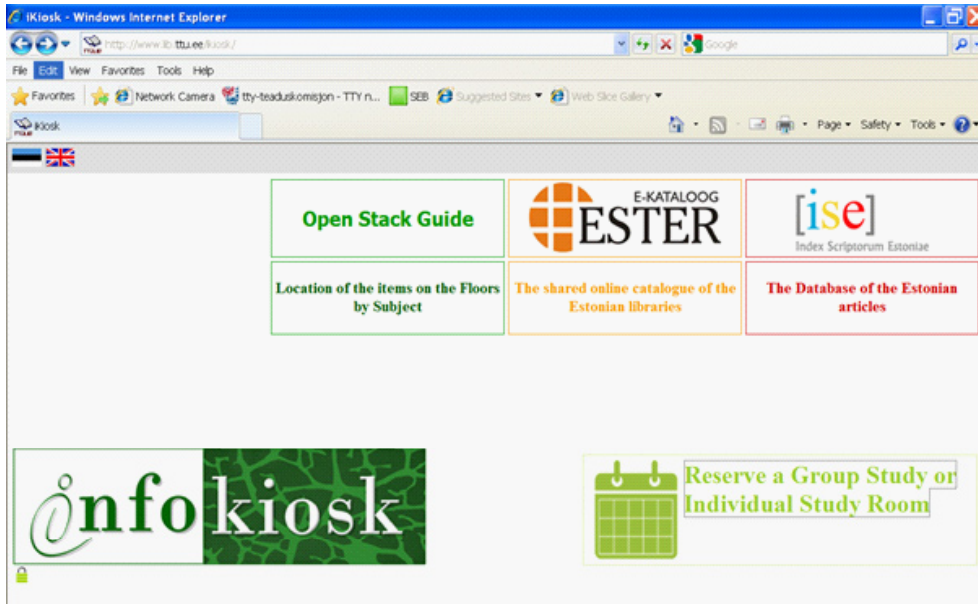
trons from 70 countries all over the world. In our printed collections there are about 700 000 stock units. We have campus-wide access to 120 000 e-books, 80 000 e-journals and about 40 factographic, reference, citation etc databases. About 70% of the acquisition budget is spent on the subscription of electronic resources. Our Open Access Institutional Archive consists of about 1 000 documents. The Library staff is 68 full time equivalents.

Starting from the needs of patrons, the features of the new building and the requirements of the library it was necessary to put into practice some new special IT applications. In this paper three unique solutions are introduced, which have been worked out in cooperation between TUT librarians and library IT staff.

Information kiosk

Information kiosk could be observed as only software product or as complex product, which consists of software, hardware and furniture. In both cases the target group is library patron. It could be accessed through library web site or as a physical standing-room-workstation with limited capabilities. In library building we have 16 information kiosk workstations based on Thin Client Windows terminals. The user interface is available in Estonian and in English. Essentially, the information kiosk is one single access point for:

- searching in e-catalogue ESTER and Estonian articles database ISE
- topographic Open Stack Guide
- reservation system for group and individual study rooms



Open Stack Guide is integrated with e-catalogue ESTER item records. There are two ways to find the item location in open stacks:

- starting from ESTER, which allows to use different search criteria and to combine them, to limit search results etc
- starting from Open Stack Guide, which allows to search by topic (about 900 divisions) or call number

After the initial search it is possible to limit the search results by selecting textbooks, special literature, reference books, dictionaries, periodicals, standards or booklets. For the response the shelf of location in red with shelf number will be shown on the floor map.

Patron assessments for Open Stack Guide have been rather high. By the feedback (user survey 2012) 48% of respondents were very satisfied, 47% satisfied, 5% partly satisfied and there was 0 answers for the choice not satisfied.

The reservation system for group and individual study rooms is necessary because the rooms are very much occupied, especially before and during examination sessions. For the reservation one must log in with ESTER account identifiers. The system allows to select the date from the calendar and the room number from the room table. It shows graphically which room at which time is free or reserved. Each reservation may be up from 1 to 4 hours per day. Not more than 2 reservations per week are permitted. It is allowed to make reservations up to 14 days in advance. Reservations could also be made through smart mobile phone scanning QR-code at the front side of the room.

GateKeeper

GateKeeper software application was worked out for the use by library staff (only authorized users). The goal was to get up-to-date information about user status at the entrance gate and to receive detailed statistics about the visits and visitors afterwards. GateKeeper is integrated with ESTER (Millennium) patron database via Patron Application Program Interface (PAPI), which allows real-time verification of patron data.

Each patron must registrate the library visit at the entrance gate. For identification TUT Library patrons can use the special library card with bar code or Estonian ID-card (chip card). At the entrance gate it is mandatory to scan the patron card. After scanning the query is sent automatically to ESTER patron record and PAPI will send the query results back to the gate. On the public patron display only short information about patron status will be shown, the detailed data (fines, fees, validity of the card etc) will be shown on the librarians display. If there are any problems the librarian can act as necessary. At the same time the query results with date and time

are stored in our local SQL database, which allows to produce different statistical reports later on. Statistics about the visits and visitors in any combination of patron data and chronological limits could be produced. Patron data available:

- Study level/occupation/social status
- Education
- Faculty/college/field of activity
- User type
- Gender
- Country of origin
- Age at the end of the period
- Age by decades

Chronological limits are available as follows:

- By the day
- By the week
- By the month
- By the days of the week
- By the dates
- By the selected period

It is possible to differentiate the number of total vistis and unique vistis (personal visitors). Simple graphical view of the results is also available.

Inventory of open stacks

In the new library building it was possible to make much literature available in open stacks, which is very user-friendly service for the patrons. But from the librarian side it is necessary to guarantee that each volume is always located on the right place at the shelf. The inventory solution consists of special software, hardware and some procedures for using ESTER database as the source of bibliographic and item records. The programming of the first version was made by the specialists from ID-Balti AS, but the library shelving system is changing and today the software is upgraded by the library IT staff. The specification of the portable data collection device is as follows:

Mobile terminal Honeywell Dolphin 9900
Processor: Intel XScale PXA 270, 624 MHz
Memory: 256 MB RAM, 1 GB Flash
Mass Storage: 2 GB memory card
Display: 3,5“ VGA color TFT LCD with touch panel
Keyboard: alphanumeric, 56 keys
Scanner: laser, 1D and 2D symbologies, images, OCR
Adaptus Imaging Technology 5.0
Power: extended-life battery, 10 hours cordless work
Weight: 600 g
Wireless Full Area Networking (802.11 b/g)
Windows Mobile 6.1
Dolphin 9900 HomeBase station for data exchange and battery charging

First the necessary set of records (based on call numbers) is generated from ESTER and loaded to mobile (handheld) terminal. The items, which are checked out, are marked with special identifier. Each inventory record consists of the following data elements:

- Bar code
- Call number
- Item location
- Item status
- Language
- Note (if available)

Using mobile terminal with bar code reader it is easy to scan the set of volumes by the librarian. If the item is not on the right place the terminal gives an alert. If the item status is „checked out" but it is however on the shelf, the system shows detailed status information. It is possible to interrupt the inventory and to continue it later. Eventually the report of absent items will be generated.

Conclusion

Why we are working out self-made IT solutions and not buying the service from IT companies? The reasons are partly caused by our history. Until 1991 it was not allowed to buy software outside Soviet Union. The boarders were opened after 1991, but our budget did not afford to buy any software. Today we are able to buy something, but there is no product on the market, which corresponds to our requirements. Our requirements are very library-specific and the solutions must be continously supported and upgraded. In addition, we do not have any binding contract with definite company, which demands juridical supervision and special fees will be asked for any small modification, which was not specified in primary agreement.

In cooperation between librarians (description of the goal and initial task, testing, feedback) and library IT division (application design and programming, prototyping, corrections, modifications, support) it is possible step by step to work out exactly those solutions, which we need. In summary the synergy and economy is achieved in cooperation and teamwork between librarians and library IT staff.

EVALUATING THE NEW LIBRARY TWO YEARS LATER

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Presentation at 6th UNICA Scholarly Communication Seminar „Libraries as Drivers for Change" in Brussels, November 27th, 2012.

Abstract

In 2010 at the Poster Session of the 5th UNICA Scholarly Communication Seminar the poster „New Library Building – New Perspectives" was presented, which introduced the new building of Tallinn University of Technology Library, festively opened in November 2009.

The new building of TUT Library has unique exterior and interior design. On the four floors of the library users find 500 different study places, about 300 000 volumes on open access shelves and a contemporary working environment for individual learning, group study, interactive learning, participating in information literacy courses.

Three years after the opening the evaluation of the new building is very positive as seen by the library administration and staff: an innovative user-friendly environment has been created for study, research, communication and relaxation for users and contemporary working conditions for staff. In order to find out the users` opinion of the physical space of the library, some interviews with representatives of different user groups were conducted in September-October 2012.

Users were asked how they were satisfied with the new library building and what they consider important. Respondents were positive about the interior, which is safe and pleasant. For students the good location of the library in the centre of the university campus was very important. The library building is connected with the university study buildings with galleries. Students also appreciated the variety of study and learning spaces in the library.

Introduction

In 2010 at the Poster Session of the 5th UNICA Scholarly Communication Seminar the poster „New Library Building – New Perspectives" was presented, which introduced the new building of Tallinn University of Technology Library, festively opened in November 2009.

The new building of TUT Library, located on the university campus corner plot is one of the newest landmarks in the TUT campus and the whole Mustamäe district of Tallinn. The library building is connected with other university study buildings with galleries.

The new library building has unique exterior and interior design. It is covered with weather-proof grid-structured polymer textile, which reduces bright sunlight. Decorated by white pixellated swirls forming annual rings of the tree, it serves also as a decorative element. This is the first textile-covered library anywhere in the world and one of the largest public buildings to employ this technique.

The interior architectural concept is based on wood – the floor plan, the interplay of forms and the selection of materials. The use of bright green for the furniture, floors and walls, the use of wood as a material and leaf pattern motif on the custom carpeting, the glass doors and service counters help foster the sense of a place, which is safe and pleasant.

Library open areas are situated from the second to the fifth floor of the five-story building, while the stacks and archives are on the underground level. TUT Press, University Technological Museum, the Bindery and Library Coffee are situated on the first floor of the building. The useful floor area of the library building is 10 640 m^2.

The main conception of the library building – one open access area where collections, workplaces, computers, self-service equipment, consultancy etc. are available for the library user, no walls and separated reading rooms.

The floor plans of the building are divided into two areas: the intensive inhouse traffic is concentrated into the central part of the building and silent workplaces are located in the border areas. Special materials and construction elements have been used to dampen noise and footsteps and reduce excessive sunlight.

Library users find here 500 different study places, about 300 000 volumes on open access shelves, free access to Wireless Internet in the whole building, computer workstations on every floor, a computer lab, training room for IL courses, contemporary working environment for individual learning and group study, various self-service facilities – check-out/check-in mashines, scanning, printing and copying machines, information kiosks and LCD panels for assistence in library services, resources and facilities.

The planning process of the new library building started in 2000 when it was decided to extend the old main library building. By that time the condition of the library rooms had reached a critical state: the technical conditions of the main building deteriorated continually, the library was located in six separate buildings and needed to move continuously. The main building, which was designed for 2300 students in 1950, had become too small and did not satisfy the needs of lecturers and students anymore, there were only enough reader seats for 1,8% of the students, merely 5% of the collection was on open access shelves. In order to calculate the conceptual model and space programme of the library and to work out the needed area, three work groups were formed: the administrative and economic work group, the collections work group and the service work group. Separate calculations were made to work out the size of collections and needed area, the need for reader seats, staff offices and other rooms. As a result of discussions and calculations the estimated required area of the library until 2020 was 7500 square metres. The materials „The Required area of Tallinn University of Technology Library" and „The University Library System – Centralised or Decentralised" were compiled. The Library Council concidered it rational to develop a centralised library system, which is why we do not have separate faculty libraries, but one unified library on the TUT campus.

In order to find out how students imagine the new library, an essay contest „The Library of My dreams" was organised in 2004.

In their essays students dreamed of a library with a cosy interior design motivating studies, which would offer various different possibilities for studying (separete rooms for quiet work, large rooms for discussions), comfortable chairs for working and sofas for relaxing and good lighting everywhere, electronic information kiosks at the entrance, virtual maps, which would display the exact location of a book on the shelf, the opening hours until late in the evening etc.

In 2005 the draft project for expanding and rebuilding the main old library building was finished, but at the end of the year the old library had to be abandoned to preserve the building`s architectural heritage.

In 2006 realising the need to improve the library`s ability to better support the learning and studying needs of TUT students, researchers and staff, the TUT Council decided to build a completely new library building on the university campus. Several discussions with TUT administration and architects were started.

People visited other Estonian and foreign libraries to gain experience, the activities of the library were analysed, the volume of collections was forecast, optimal models for the organisation of services and work were devised taking into account the influences deriving both from information technology developments and the increasing proportion of e-resources. A new conceptual model, new calculations

of the required area and space programme were compiled, which served as a basis for organising the architectural idea contest for the library building.

In 2006 a competition was organized to get the architectural conceptual design for the library. The competition involved 10 participants. In July the best solution was selected by the jury. The winner was a firm of Estonian young architects - AET Arhitektid.

At the same time the decision of the Estonian Government was announced that the money for the new building of TUT library, will come mostly from the European Union Regional Development Foundation.

The project design and construction drawings of the building took place from October 2006 to October 2007. At the end of October the public procurement for getting the constructor was announced. The best tender came from an Estonian firm AS Oma Ehitaja.

In connection with designing discussions about the conception and space programme of the new building were held throughout the year. Design meetings took place every week and the director of the library participated in all of them.

In order to determine reader satisfaction, a questionnaire survey was conducted in November 2006, titled „How do you evaluate service quality in our library?"

The aim of the questionnaire was to acquire trustworthy information from the users of services in order to analyse and synthesise service quality. The survey involved only students, because the proportion of students in the library`s readership was as large as 63%. The SERVQUAL method was applied in the questionnaire. The areas of services or themes, the quality of which was investigated were: the quality of the environment, the quality of service arrangement, the quality of information, the quality of the human resources. Altogether, 279 readers participated in the survey.

The analysis of the study results provided the necessary platform for taking decisions related to the project of the new library building, and offered background information for designing the future service system.

Some facts characterizing the new building:

- twice as much floor space as in the present buildings, the number of reader seats and computer workstations will be increased 3 and 5 times respectively;
- all collections and service points are located in the same building;
- over 8 times more volumes will be placed on open shelves;
- special rooms for training, group and individual work;
- special focus on lighting, heating, air-conditioning and acoustics which constituted problems in the existing buildings.

The construction of the new building started in February 2008. The building was completed on time and in June 2009 the library started to move in. At the same

time furnishing the rooms, adjusting the IT and technical systems, moving and re-arranging the collections started.

In September 2009, on the occasion of the 90th anniversary of the library the new contemporary building was opened to users.

When planning the new library building the main goal was to create an innovative, open-plan, with rational work arrangement, user-friendly environment for study, research, communication and relaxation for the users and staff.

There were several other aims like,

- to bring the library together into one building from seven different places on the campus and in town
- to create contemporary storage conditions for collections
- to expand the capacity of the open access area
- to increase the number of seating places and computer workplaces for users
- to create a contemporary working environment for individual learning, group study, interactive learning, user training
- to offer various self-service facilities for users
- to improve access for users with disabilities
- to create high quality exhibition space
- to modernise ICT facilities
- to improve working conditions for staff

All these aims were fulfilled in full.

Three years after the opening the evaluation of the new building is very positive as seen by the library administration and staff.

The library staff think that the working and relaxation conditions in the new building are not comparable to the previous situation when the library was scattered in various separate places.

The new building has very pleasant interior and exterior design. The new library has adequate floor space for working and relaxing for the staff, comfortable and attractive furnishing. The library is competently heated and cooled during the changes of seasons, well lighted, ventilated and air-conditionered.

The staff of Information Services and Library Services Departments are satisfied with their rooms being on the service floor, closest to the readers. Their rooms for relaxation are also there. The path of a book from the moment of placing an order to the reader has been well thought through: the departments like acquisition, cataloguing, bibliography are located in the personnel area on the fifth floor, from where the books after processing move to open access collections on the lower floors or closed collections on the basement floor.

Good conditions have been created also for the relaxation of the staff on the fifth floor. There is a sauna, facilities for eating and a massage chair. Carpeting on the floor and a lot of green plants create a comfortable and cosy atmosphere.

One disturbing factor is the fact that the meeting room on the same floor, which is meant for the library staff, is due to its presentability an attractive place also for the university management and faculties, who wish to organise numerous events there.

The library administration is also satisfied with the beautiful and attractive interior and exterior design of the building. As by now library building has become a popular place for the whole university, especially the cafe on the first floor with a cosy design and good service, there are always a lot of people. However, the numerous events held at the cafe disturb the readers who want to study and work quietly in the library.

Due to the fact that the library has become a popular work and study place for so many people, there could even have been more space in the new building.

The library staff find that their library is both, beautiful and delightful and willingly show it to their guests and colleagues.

In order to find out the users` opinion of the physical space of the library, some interviews with representatives of different user groups were conducted in September-October 2012.

Users were asked how they were satisfied with the new library building and what they consider important.

Users are satisfied with the library new building. For students the good location of the library in the university campus corner plot connected with the study buildings with galleries is very important.

The Bachelor student, using the library for a year, found library atmosphere inspiring for creative work. The library space looks good, is inviting and easy to use, no problems.

The Bachelor student, using the library for the second year, the library is primarily a place to study. Fortunately, for this purpose the library has different possibilities for individual learning, group study. Sadly, the rooms for group work are often occupied. Sometimes library atmosphere is problematic, because some people talk too loud on the site – be silent! This makes concentrating on studies difficult.

The Master student, using the library for the third year, the library is a good place for learning and studying, reading journals and group study. There is adequate floor space for seating. Signposting in the library is effectively designed, but not always clear.

The Doctoral student, using the library frequently, individual work rooms are good and well designed and adequate for user needs, a good possibility of consulting the personnel.

The Lecturer/Researcher, the Institute of International Relations, using the library almost every day, the library has good interior design, comfortable and restful, well designed reader seats, good open access collections, which are easy to use. The library has a good location, right next to the faculty building.

The Alumnus, I like visiting the beautiful library, unfortunately there was no such excellent library during my studies at the university.

To find out the satisfaction of the majority of users with the library services and environment an online survey is carried out by our library in November-December 2012.

Conclusion

Although the TUT library offers a large number of electronic resources and e-services for its users, library`s physical space is important to them and our new building is becoming very popular learning and study place especially among the students. The library is fondly called „the green library".

The positive results of the new building – the number of readers has increased by more than 30% within three years, 10,000 new readers have been added, approximately 1500–1600 readers visit the library daily.

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DEVELOPMENT OF THE SUBJECT LIBRARIANS SYSTEM AT TALLINN UNIVERSITY OF TECHNOLOGY LIBRARY

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Presentation at Riga Technical University Scientific Library 150. Anniversary Conference „Academic Libraries in the 21st Century", October 18th, 2012.

Introduction

The university library has a crucial role as a strategic partner in the processes related to information and knowledge within the university. The changes in the operating environment of the university will affect the duties of the university library by creating a demand for new competences and tasks.

The primary mission of the university library is to support the learning, teaching and research activities of its parent university by providing comprehensive access to scholarly resources and delivering high-level library and information services.

TUT library collections, services and facilities help increase the research capabilities of the university. TUT library has introduced the subject librarians system, which is one effective way of achieving these aims.

A subject librarian is an information specialist at the library, who acts as a primary liaison between the library and one or more academic departments and who is appointed to organise the information services of the library in a particular subject field.

The main functions of the subject librarian are: to develop and maintain the subject collection in the library; to provide subject oriented user education to students and faculty members; to promote and provide specialised reference and information services to all library users.

The role of the subject librarian is changing all the time but continues to have a significant role in the delivery of library services.

Historical review of information services at TUT Library

The period of 1970–1980s

TUT Library adopted the system of subject librarians already in 1970, when the Department of Bibliography started to employ graduates of Tallinn Polytechnical Institute in order to improve the quality of library work with the help of people with specialist knowledge. The first subject librarians were the mechanical engineer Ine Leinuste and the chemist Meelis Ideon. They were needed for enhancing content-related bibliography and information work as well as for acquisitions, classification and other areas.

Soon the frames of the Department of Bibliography became too restrictive for their functions, which is why the Reference Services Department was formed in 1975 with a staff of six subject specialists. The distribution of work between the Bibliography Department and Reference Services Department was specified and the information work tasks that required good knowledge of the profile of chairs were transferred to the Reference Services Department, who were closely related to the information specialists in the chairs of the university.

The period of 1980–1990s

In the 1980s differentiated information service in the fields of study and primarily research began to prevail in information work. For example, in 1985 subject specialists started to serve 12 research topics of the institutes using selective dissemination of information and regularly providing relevant topic-related information. Promotion of research and study literature matching the profile of Tallinn Polytechnical Institute also rose to the centre of attention – specialist days of chairs and information days of field-related study literature were organised. In order to spread bibliographical knowledge several comprehensive publications were compiled, such as a series of methodological tools "Erialakirjandus ja selle otsing" ("Specialist Literature and Search for It"), multiple-edition bibliographical publication "Bibliograafia lühikursus" ("Short Course of Bibliography") for students and many others.

In the 1980s subject specialists also did a great job of finding out what specialist journals the library needed as well as determining the period of storage for the existing journals in the library.

The period of 1990–2000s

A period of big changes and restructuring arrived at the time of Estonia regaining its independence at the beginning of the 1990s.

In 1993 the Information Services Department was formed with seven subject librarians.

First and foremost, the principles of acquisition changed – direct access to the most important bibliographical and full-text databases of the world became the primary need.

Information search and international interlibrary loans (ILL) gained first priority.

The developments of information technology and new media brought new trends to the information services. Students and faculties needed comprehensive help in selecting databases and accessing and evaluating materials from the web. Faculty members wanted subject librarians to go to their office for on-site instruction.

New technologies in libraries also set new and bigger demands on the professional skills of both the librarians as information brokers as well as library users.

To understand the new environment of information services from the users' perspective some user satisfaction surveys were carried out in the information service of TUT library in 1996-1999. The surveys showed that as the technologies become more complex the role of the librarian as a teacher becomes more important. Teaching and training skills become essential in order to prepare information users for independent work in the virtual environment.

There was a great need for courses in information literacy. In order to manage with the task of teaching information literacy (IL), it was necessary to train future trainers – subject librarians - responsible for fulfilling this role. Our subject librarians had a good chance to participate in the EU funded project DEDICATE in the years 1998-1999. It was an international European Telematics project for online professional development in information literacy and user education. DEDICATE course participants from our library gained their first experience of learning and working in a frame-based web environment and after this course it was already possible to use this course model for the design and delivery of their own course at the parent university.

Information literacy education has long been a priority at TUT library. We are the only library in Estonia that has managed to deliver continuous library user training since the 1960s. The subject librarians offer different training courses on the use of various kinds of information sources and on the effective use of library services.

It was very important at that time that the course given by subject librarians was embedded in the university curricula. It was a five-lecture course "Traditional and electronic information sources at TUT library" carried out for all first-year students, which was one part of the obligatory course (UTT 3011) Organisation of the Studies.

The period of 2000 – 2008

The rapid development of information and communication technology brought along many changes to the university of the 21st century. The ways of learning and teaching in knowledge-based society became more open and flexible. Open university, distance learning, e-learning, courses in the web environment offered alternative possibilities in obtaining higher education. A traditional library turned into a hybrid library where alongside traditional documents more and more electronic resources and services were offered.

Important changes took place in the library and its information services. For the first time the campus-wide license for accessing the full-text of e-journals was obtained in 1999 and since then the role of e-journals has increased rapidly year by year. For searching and administrating different e-journal collections through common user interface EBSCO A-to-Z software was bought and adapted. In 2004 access to full-texts of e-books was also obtained. The library website was improved by subject librarians so that in 2004 the section "Subject Gates" included more than 900 evaluated and classified links to open access resources in nine subject domains. Information users were encouraged to turn to the relevant subject librarian for help, email their subject enquiries directly to them and get answers electronically through the library's webpage.

The role of subject librarians in collection development grew even more. Subject librarians selected appropriate databases as well as traditional materials to support the teaching, learning and research of a particular faculty or department. In 2003-2004 the section of the "E-library" service on the library website was created and improved. The full-texts of electronic items and services available at that time were included in it, which could be used independently via the web. The liaison relationships of subject librarians with faculties and departments provided an essential collaborative environment in developing subject specific collections at the library.

But it is not enough to just select and acquire materials, it is increasingly more necessary to guide users. One of the most important functions of the subject librarians at that period was teaching information literacy at all university levels and including IL courses into the academic curricula.

In the academic year 2000/2001 one part of the course for first-year students was for the first time carried out in the format of distance education, using the learning environment, which was specially worked out for that purpose at TUT library. In addition to that the course "Specialised information retrieval" for master study students was run in the library self-made web-based learning environment in 2003.

In 2004 the library conducted a questionnaire survey in order to find out the information needs and information seeking behaviour of academic and research staff at TUT. The survey was conducted in cooperation between the library researcher and

subject librarians. Lecturers and researchers from eight faculties and five institutes of TUT were involved in this survey. Data were gathered through a web questionnaire in 2004 and interviews of researchers in 2005-2007. The results of the study showed the usage and usefulness of various information sources, such as printed, electronic and human sources. The survey revealed that providing access to information does not ensure active use of electronic information by itself.

During the interviews researchers also gave positive feedback on the work done by the subject librarians. They acknowledged subject librarians important role in the acquisition of books, journals and databases, access to information resources (incl the remote access to databases), informing the faculty about new information resources and services at the library.

From the analysis of the findings of this survey the need to map the subject librarians' roles in liaison relationships with faculties emerged. In April 2007 a study "The roles and competences of subject librarians in supporting faculties with information" was undertaken. Six subject librarians were involved in this study. The outcomes of the survey showed that the main tasks of subject librarians are identifying the information needs of the faculty; developing the subject specific collections in the library; carrying out information skills training for faculties; developing and delivering information services to faculties; developing the subject gateways on the library website.

To fulfil those tasks the following competencies are required by subject librarians: knowledge of the subject, knowledge of data sources available on the subject, computer skills, information searching and retrieval skills, communication skills, teaching and pedagogical skills, English language skills.

Subject librarians provide an important interface between the user and the library. At TUT library they play an important role in learning activities, promoting the use of information services, selecting electronic materials, preparing and providing guides and manuals on the use of resources, providing effective user education through instructions, presentations and training.

The new library building – new challenges

The new building of TUT Library – the house for information and knowledge, in the joint campus of TUT was opened to readers in September 2009.

The new TUT library building has more than 300,000 volumes on open access shelves, a variety of study places for 500 users on four levels, free Wireless Internet in the whole building, 100 computer workstations, a 22-seat computer lab, a training classroom for IL courses, 26 individual study rooms, 6 group study rooms, 16 information kiosks, 8 LCD panels, 2 self check-out machines, 1 self check-in ma-

chine, an approximately 12 square meter exhibit area, a 60-seat cafe.

Considerable changes have taken place in the library and information services.

Subject librarians have met new challenges and opportunities in the new building:

working as an information consultant in several languages (incl English), assisting in the use of self-service facilities (printing, copying, scanning machines), teaching information search in the i-kiosks of the library (16 of them, including the e-catalogue, open stack guide, study room reservation system etc).

At present we have 7 subject librarians at our information services department: subject librarians for civil engineering, chemical and materials technology, mechanical and power engineering have all graduated from TUT, subject librarians for information technology and social sciences, science, economics and law have no academic qualifications in the field they specialize on, but they have had a long practice in the field.

Present roles of subject librarians at TUT library

- reference service / help desk service;
- liaison with the faculty;
- collection development;
- carrying out user education;
- promoting library services and resources;
- exhibition activities;
- developing the library webpage.

Subject librarians provide reference services at the Help Desk being Information Consultants on Duty, 2–3 shifts per week for everyone. Reference services are carried out by 12 hours per work day and 5 hours per weekend day.

They assist with any questions about the library, information services and collections to all library users. Technology provides numerous platforms for providing this service, such as online LibChat, Ask a Question web form, e-mail, phone.

TUT library provides access to a wide range of scientific information. In 2012 there is access to 100 different databases – access to 80,000 titles of e-books and 65,000 titles of e-journals. Other information resources – the joint e-catalogue ESTER of Estonian libraries and Estonian databases, the web-based tool EBSCO A-to-Z, the digital collection of TUT Library (dissertations of TUT, digitised textbooks etc), the general reference collection of the library, more than 3 000 items and a map collection, about 1000 items.

Liaison with faculties – subject librarians act as a liaison in developing direct and effective two-way communication and collaboration between the library and the

academic departments. Their main duty is to keep the faculty informed about library issues. The key factor in developing the relationship with academics is communication. Subject librarians have to make themselves known and available to the faculty, there are different ways for this – subject librarians' faculty visits or academics' subject librarians visits, contacts via phone, e-mail, distribution lists or subject listservs.

Daily work with the faculty includes selecting journals and electronic and digital materials, taking faculty researchers' and teachers' book orders, setting up Trials and organising presentations of new databases, providing information for reviews and accreditation, providing help guides and tutorials for academic staff. Subject librarians provide specialised assistance for the faculty staff and individual and group consultations for postgraduate students.

Future developments – more efficient liaison between the library and faculties as partners and collaborators!

Subject librarians are responsible for a range of collection development activities associated with one or more subject areas. They review and select appropriate online journals and databases, coordinate book purchase. Subject librarian/faculty collaboration is very important in the acquisition of new electronic journals and books, new research and teaching tools. Our Subject librarians would expect a more responsible attitude towards book orders from the lecturers of institutes. The subject librarians' duty is to organize pre-purchase exhibitions for the faculty staff in the library training classroom – whereby it is also possible to make suggestions using an online form throughout the year, academics can see their book orders on the library webpage. The Subject librarians' duty in collection development is also to develop and maintain the subject journal and database collections in the library.

Future developments – subject librarians collaborate with the faculty in academic departments to ensure that appropriate library resources in specific areas are purchased each year according to the availability of financial funds. Subject librarians are the most effective selectors of materials because they have both subject knowledge and information skills to achieve this task.

Efficient user education at TUT is achieved by subject librarians. They can effectively teach information literacy (IL) skills to students and faculty members. Training information skills is a continually major part of the work of our subject librarians. At present library user education is provided in various ways – via e-courses, blended courses, traditional courses, workshops. IL courses are offered to different user groups – new students, international students, bachelor and master students, academic staff.

The first lectures in English on the services and information resources of the library to exchange students, whose language of tuition is English, and the foreign students

of the Faculty of Chemical and Materials Technology were delivered in the autumn of 2009. In 2010 the cooperation with the International Relation Office and the faculties become even closer and sources on Specialised Information Retrieval in law, economics and business administration were added for foreign students (of the Faculty of Social Sciences and the Faculty of Economics and Business Administration). By now the number of courses in English has increased even more.

The most successful IL course for the first-year students is the blended course "Generic information skills" embedded into academic curricula programme "Organization of Studies" as part of the obligatory course, which gives 1 credit point. 1300-1400 new students take this course every year. In 2010 our subject librarians created three interactive e-learning objects under the e-learning programme BeST for use in the curriculum programme "Organisation of Studies".

E-learning IL courses "Specialised Information Retrieval" in specific subjects for bachelor and master students have been offered in the Moodle environment since 2010. WebCT and library-made software were used before.

Several traditional face-to-face IL short courses are offered in cooperation with faculties and institutions to doctoral students, foreign degree students and academic staff. Some of these courses are included in academic curricula as part of some other subject.

In 2011 subject librarians delivered training courses for library users for 2295 participants lasting altogether 940 hours.

Information literacy developments for the nearest future – there is an increasing need for English language courses in searching scientific information. The number of foreign students grew rapidly at our university in 2008/2009, thanks to the association between IUA and TUT. Now their percentage from the total number of university students is about 5.6.

More e-learning IL courses for different user groups are presented using the Moodle platform.

Promoting library services and resources keeps the academics and students up-to-date with the contemporary developments of the library. Subject librarians help users become familiar with the services, resources and facilities of the library.

Different channels are used to promote the library, collections and services: the library website, library orientation tours and training sessions, production of guides, handouts, flyers, posters, information slides on the LCD panels in the library and university area; organizing special events - e-book reader promotion week last year, Library Days for newcomers every autumn, participating in the activities of the university Open Days twice a year, in autumn and spring, publishing articles in the TUT newspaper "Mente et Manu", in the TUT student handbook etc.

Library organized exhibition activities – it is typical that subject librarians participate in these activities and arrange exhibitions to introduce the collections in their specialist field in the gallery of the library entrance, once or twice a year per every subject librarian. A permanent exhibition "The most of the most in our library" on the 5th floor compiled by the subject librarian presents the most interesting books and journals in our collection.

As the library organises about 40 subject, personal and anniversary exhibitions a year and about the same number of exhibitions of new acquisitions in several places in the library as well as the university, the task of the information department is also to compile the annual calendar of all the exhibitions.

The role of subject librarians in developing the library webpage

The latest webpage with the TUT template-based design was launched in 2010. Each department of the university, including the library, has to create and publish their content by themselves in the Saurus Open Source Software.

Subject librarians currently have to manage pages for Faculties, for Students, Information Sources, Library Digital Collection, Exhibitions, News and Events. Their duties also include uploading weekly lists of new books on the webpage and user guides and tips on advanced search for users.

They are also engaged in social networking on the library webpage - Twitter, Facebook, Subject Librarians' Blog.

Subject librarians' competences and skills

As the digital age has brought numerous changes to the library workplace and rapid changes to the research landscape of the university, subject librarians are required to develop their skills and competences to effectively support the changing information needs of the users.

New skills - skills like technical/IT skills, promoting/marketing skills, presentation/teaching skills, online communication skills, team working skills, listening skills, English language skills are all important.

Yet, in order to satisfy the changed needs of the university scientists, a whole range of skills are added, which are crucial for subject librarians. Like Antony Brewerton from the University of Warwick, UK, pointed out in his presentation on the subject librarians' role of supporting university scientists at the LIBER conference this year.

Also skills and knowledge of information discovery, designing IL training, copyright and plagiarism, open access, preservation of research data, data mining, citing and

referencing, metadata using, digital archiving, mobile applications and resources etc are important. This is how it is and one has to agree with this.

What have we already done for subject librarians' professional training and development?

A serious beginning for subject librarians was their participation in the EU distant education project of information retrieval DEDICATE in 1998–1999 (similarly to the Latvian colleagues, who also took part in the project).

Since then subject librarians have improved their qualifications at various distant training courses at our university, such as "Studying and teaching on the web" etc, participating in ERASMUS lifelong learning education and training programmes since 2008, participating in different specialised seminars and workshops in Estonia and abroad.

In order to share experience of being science and engineering subject librarians, Summer Schools of subject librarians of Estonian university libraries have been organised since 2001, during the first years annually and in the recent years every other year. For example, Summer Schools organised by our library: Virtual Communication in the university environment, Young scientists and the Library: Expectations and Reality. Our subject librarian for science also maintains the university libraries' Subject Librarians blog "Ainespetsid" (Subject specialists).

New initiatives in subject librarians' training

The purpose is to continually develop one's professional skills and subject knowledge. The primary focus is on improving one's information search skills in order to offer efficient service to young scientists/doctoral students, who are currently our main target group.

It is necessary to add subject librarians' training sessions in such areas like web design, citing and referencing, copyright and plagiarism.

We have to be ready for creating and using different new applications, such as the graphical user interface Quick Response Code (QR). The first attempts have been made – the QR code on our new handout for freshmen this September.

More training in bibliometrics knowledge, in cooperation with our university Research Department.

Subject librarians' future trends and activities

Our mission is to facilitate and enable the development of an information literate academic community and support research in a flexible and responsive manner.

- more focus on supporting Research Data Management at the university (advising about managing, publishing, preserving their output)
- offering university researchers online tools (either RefWorks, EndNote or Zotero) for managing their research sources from the library site
- a plan to carry out a survey next year in order to find out how researchers and lectures are satisfied with subject librarians' support and library collections
- from the different categories of researchers we have selected the young scientist/doctoral student for our main focus group, who we counsel on information search, offer training to and compile guides and handouts for
- embedding more of our IL tutorials in Moodle
- conducting a short users' survey in November to promote library services

Summary

University libraries in the digital age have to be partners in knowledge creation at university. Sustainable dialogue with their research community is a key challenge for the library and information services. Subject librarians are a valuable resource in the library, who build effective working relationships and collaboration both with the faculty and students.

For them it is essential to be visible and proactive at the university.

As subject librarians play an important role at our university, the subject librarians system at our library has justified itself entirely. And as the users' information needs develop fast, it is the main responsibility of the library to continually invest in their subject librarians' development and training.

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E-LEARNING AND B-LEARNING INFORMATION LITERACY PROGRAMS AT THE SCIENCE AND TECHNOLOGY UNIVERSITIES IN ESTONIA, FINLAND, LATVIA AND POLAND. A COMPARATIVE STUDY

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Abstract

The paper presents the results of the parallel research into e- and b-learning information literacy projects conducted at the science and technology universities in February and March 2011 in four countries.

Design/methodology/approach: a common survey was prepared to conduct a parallel research in Estonia, Finland, Latvia and Poland – the countries from Baltic Region. It focused on the following main areas of interest: information literacy e-learning projects and programs already introduced and planned for the future, platforms in use, target groups (e.g. academic staff, students), outcomes and measures. A common questionnaire with closed questions was applied, which has made it possible to tabulate data. Library induction and information literacy courses carried out in traditional face-to-face form constitute background for distance learning projects therefore information about e-learning has been supplemented with

concise information about it. The results from all the countries have been collected and presented in a unified format so that they can be easily compared. In conclusion some value-adding activities that might be applied by libraries to introduce or enhance their e- and b-learning services have been proposed.

Findings of the survey show the state of art in e- and b-learning information literacy projects at the technical universities in countries considered. The results may be useful for libraries to assess their readiness to adjust to changing patterns of learning and teaching and therefore to enhance their services. The easily comparable data can also be used for further study.

Keywords: e-learning, b-learning, information literacy, library skills, information education, comparative study

1. Introduction – impact of e-learning on library and information services

"Online and physical learning spaces are affected by diverse contemporary phenomena such as the extensive use of digital technologies, an emphasis on learner-centred study and the need for environmental sustainability" [JISC, Learning Environments]. New computer and information technologies influence learning and teaching patterns. The evolution of learning and teaching is reflected in the development of virtual learning environments. Universities create user-centred range of services including distance-learning programmes and facilities. E-learning is becoming an increasingly important approach to learner-centered education.

For many years now academic libraries have been providing their users with basic library skills instruction. Mission statements of many academic libraries include provision of integrated library and information services for their users. Libraries seek also to assist students in their self-education and overall personal development including information literacy (IL) and information and communication technology (ICT) upskilling. In this context provision of modern e-courses by academic libraries seems to be a natural way of fulfilling their mission. That is why library and information services are increasingly involved in e-learning at various levels, from library induction on-line courses, through more advanced IL courses to stand-alone information science modules embedded in university curricula. Academic libraries are also involved in the design of learning materials, e-tutoring and e-support.

It is worth pointing out that effectiveness of learning in traditional and virtual environment does not significantly affect library skills learning outcomes. Results of the research reported [Beile P., 2002] showed that regardless of the learning environment (classroom library instruction or web-based tutorials) outcomes among graduate students tested proved to be similar. Library skills were measured with library skills quizzes immediately before and after the instruction. The scores increased

significantly after instruction, which leads to conclusion that instruction was useful and effective, but did not significantly vary across learning environments.

Similar results showed an experiment conducted at the Cleveland University in 2009 [Xu Y., 2010]. An IL and ethics module was delivered as a component of the electrical engineering course at the Cleveland State University. Students participating in face-to-face seminar and students in the online module were tested before and after the course. Both groups made significant progress. Again, the results of pretest and posttest scores were similar regardless of the environment, which means that the effectiveness of the online module was equivalent to that of the seminar. Therefore "some of the fears of replacing face-to-face interaction with a librarian seem unwarranted in terms of impact on academic performance" [Beile, P.,2005, p. 6].

Application of distance learning for user education in Estonian, Finnish, Latvian and Polish technical university libraries was investigated through a survey. Its results provide an overview of library distance learning landscape in considered countries. In three of them e-learning has been introduced to supplement or replace traditional instruction. In all the countries technical university libraries surveyed declare that they are going to develop e-learning courses for end-users within the next two years. Library instruction target groups are the same in all four countries, however the groups that libraries tend to pay special attention to differ from country to country.

Most of libraries receive at least organizational support from their university e-learning units. However, there are also examples of self-sufficiency of the libraries and one example where the central university e-learning unit is managed by the library (the Library of the Technical University of Lodz, Poland).

1.1 Terminology

At the very beginning of the research the authors recognized the need to clarify some crucial terms to avoid possible intercultural misunderstanding. For the purposes of this paper the following terminology has been applied:

Distance education – an organizational form of education in which instructional provisions, tutorial interactions, individual control of learning, as well as monitoring of practice take place via media which make the simultaneous personal presence of tutors and students avoidable [FRITSCH, H., 2004].

E-learning is learning facilitated and supported through the use of information and communication technologies (http://www.jisc.ac.uk/whatwedo/themes/elearning.aspx). E-learning courses can be carried with or without tutor's supervision.

B-learning (blended learning, mixed learning) course is a combined course comprising face-to-face and the internet-based sessions.

"**Technical university**" and "**university of technology**" are used in this paper interchangeably and are understood as a higher education institution (academic level) focused on research and teaching engineering and science.

Librarian – a member of a library staff.

Library induction (library orientation) – a basic introduction to library resources, facilities and services, usually designed for first-year students.

Information literacy (IL) – "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner" [CLIP, 2004].

Embedding an e-course into academic curricula refers both to basic level competencies courses contained within curricula (as separate mandatory or optional courses, no matter if credit-bearing or not) and to advanced IL courses inserted into curricula as stand-alone courses or as part of subject disciplines).

All the figures presented in the paper have resulted from the authors' research described below.

1.2. Method

A parallel research was carried in March 2011 in four countries. 25 copies of a questionnaire (Appendix A) were sent to the libraries of technical universities: 1 questionnaire in Estonia, 1 in Latvia, 5 in Finland and 18 in Poland. Out of 25 libraries approached, 20 ones replied to the survey: 1 library in Estonia, 1 library in Latvia, 4 out of 5 libraries approached in Finland and 14 out of 18 libraries approached in Poland (Appendix B).

A questionnaire consisted of 22 questions divided into 5 paragraphs which referred to organization of e-courses, embedding the library e-courses into academic curricula and involvement of libraries in supporting distance learning at parent universities, plans for organizing e- or b-learning courses in the future and funds for educational activities of the library. Respondents were also asked to provide background information about traditional methods of teaching applied at their libraries. The authors hoped for finding interrelations between educational performance to date and e-learning development. However, as no apparent correlation has been observed, information about traditional teaching has not been included in the paper. It has been collected for reference in Appendix C.

2. Context of the research

Estonia, Finland, Latvia and Poland are Baltic countries in Central and North-Eastern Europe. Finland is the EU-15 state, whereas Estonia, Latvia and Poland joined the EU in 2004.

Country	Population (2010 Est.)	Internet Users, Latest Data	Penetration (% Population)	User Growth (2000-2010)	% Users Europe
Estonia	1,291,170	969,700	75.1 %	164.5 %	0.2 %
Finland	5,255,695	4,480,900	85.3 %	132.5 %	0.9 %
Latvia	2,217,969	1,503,400	67.8 %	902.3 %	0.3 %
Poland	38,463,689	22,450,600	58.4 %	701.8 %	4.7 %

Tab.1. Internet usage in considered countries. Source: Internet World Stats. Retrieved May 16, 2011 from http://www.internetworldstats.com/stats4.htm#europe

2.1. Distance learning policy in considered countries – an overview of basic law regulations

2.1.1. Estonia

At the state level the "Strategy of the Estonian e-learning Development Centre 2007–2010" has been signed. The strategy is based on the planning and realization of e-learning in Estonian higher and vocational education through two consortia administrated by the Estonian e-learning Development Centre: Estonian e-University and Estonian e-Vocational School.

Estonian e-University is a consortium of universities and applied universities which was created in 2003. The foundation and full members are: Estonian Ministry of Education and Research, Estonian Information Technology Foundation, Tallinn University of Technology (TUT) and other seven universities (The Estonian e-Learning Development Centre).

At the university level each university has its own strategy. At Tallinn University of Technology (TUT) a "Strategy of the TUT e-learning 2006–2010" has been adopted by the Council of TUT.

Although the web-based training courses began in 1997 at TUT, active developments in this area started within the Estonian e-University projects REDEL and VÕTI in 2004. The activities have been continued within the e-learning BeST programme of European Social Foundation (since 2008).

In 2009 the Educational Technology Centre to the TUT Open University was created. It offers multimedia services.

2.1.2. Finland

The Ministry of Education and Culture is responsible for implementing the education policy adopted by Parliament and the Government. After national elections Finnish government adopts every four years an Education and Research Development Plan which is based on the education and science policy aims recorded in the Government Programme and the Government's Strategy Document (http://www.kka.fi/files/994/Quality_manual.pdf). There are altogether 16 universities in Finland. Ten are multidisciplinary and six specialized universities. All universities operate under the Ministry of Education and Culture and they confer bachelor's, master's, licentiate and doctoral degrees (3 + 2 + 4 years). University level education in technology is organized at five universities: Aalto University, Lappeenranta University of Technology, Tampere University of Technology, University of Oulu and Åbo Akademi University.

2.1.3. Latvia

At the state level distance education is defined in the Law of Higher Education, and mentioned in Latvian national Strategy. However, there are no confirmed state strategy or other regulations concerning distance learning at state level.

At the university level there is a Distance Education Study Centre of Riga Technical University as the unit of the Faculty of Electronics and Telecommunications. The objective of the Centre is to organize and develop distance learning courses and studies in the distance learning medium. The Centre is equipped with up-to-date telecommunications (ISDN videoconferences) and multi-media. Faculty staff and students are involved in the development of multi-media study materials and virtual forums on the Internet. The six universities of Latvia have signed a collaboration agreement on e-learning development. At present Latvian universities have modern e-learning environments. Many of them have moved to Moodle in recent years. At Riga Technical University many study courses are elaborated in e-environment and after connecting the students database with the virtual learning environment the usage of e-learning increased rapidly.

2.1.4. Poland

At the state level the provisions of the law regulation are consistent with the rules included in the Magna Charta of European Universities and with the requirements of the Bologna process. E-learning policy at higher education level is regulated by the Act of 27 July 2005 *Law on Higher Education* with further amendments [Law on Higher Education, 2005] and the Regulation of the Minister of Science and Higher Education of 25 September 2007 [Rozporządzenie Ministra, 2007] with further

amendments concerning requirements to be fulfilled in order to deliver higher education courses using distance education methods and techniques. According to the regulation, higher education institutions are entitled to provide distance learning courses for both full-time and extra-mural students. Except for practical training and laboratories, up to 60% of standard didactic hours for each course may be provided with distance-learning methods and techniques.

At the university level e-learning policies, organizational and operational arrangements depend on authorities of individual universities. They must be consistent with the state regulations and have their source in understanding the needs and rights of academic societies they serve.

In Poland there are 461 higher education institutions, including 18 public technical universities and 6 non-public technical ones. They operate on the basis of the Law on Higher Education of 2005. Out of nearly 2 million students in Poland, over 129 000 ones study at technical higher education institutions.

3. Results of the research

Results of the research have been divided into 5 groups which reflect topics of questions asked in the survey. If a library had not provided any e-course to the date of the survey, it proceeded in the questionnaire straight to the group of questions concerning plans of this library for the future provision of distance education.

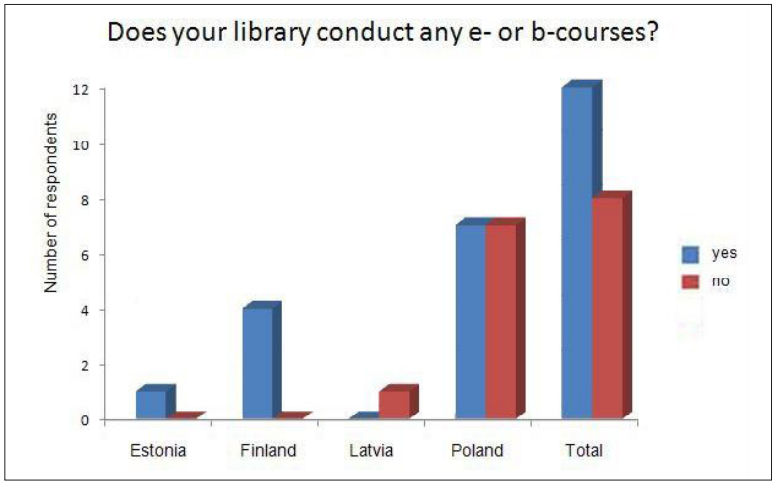

Fig.1. Libraries which have declared provision of e- or b-courses

Out of 20 technical libraries surveyed only 12 have declared provision of e-courses to date. They were all the libraries in Finland, half of libraries in Poland and the only

technical library in Estonia. The library in Latvia does not conduct any e-course at the moment. However, some elements of e-course have been applied to a subject course which has been realized for several years at one of the academic departments. Riga Technical University plans to introduce e-courses in near future. Therefore, in the next chapter the libraries from only four countries have been considered.

3.1. E- and b-courses provided by libraries

E- or b-learning courses have been organized in libraries surveyed since mid nineties. Most experienced are Finnish libraries. Aalto University started providing e-courses in 1994, followed by the Tampere University of Technology (1996). The Estonian Library of Tallinn University of Technology has been conducting e-courses since 2000, the first Polish library induction e-course was organized in 2008 at Poznań University of Technology and the first Polish b-learning course embedded in students' curriculum as an individual optional module for 1 ECTS was introduced in 2009 at Cracow University of Technology.

Most popular e-learning platform is Moodle 1.95 – 2.0 which is used in all three countries. However, Finnish libraries have reported the use of other platforms, e.g. Discendum Optima, Ning, or Blackboard. One Polish library uses wbtserver.

Moodle is a Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). It is a free web application that educators can use to create online learning sites (http://moodle.org/). Discendum Optima is a SaaS (Software as a Service) with flexible architecture an interface easy to be used. (http://www.discendum.com/english/tuotteet_eng/index.html). Ning is a platform for creating social websites. (http://about.ning.com/product/) and Noppa is the study and teaching portal. It is a tool for both students and lecturers of Aalto University and Lappeenranta University of Technology for everyday course work and communication. "Noppa is composed of course home pages that include e.g. course overviews, dates of lectures and exercises, course materials, information about assignments and exams, news and results." (https://noppa.lut.fi/noppa/app). Blackboard in turn is an on-line platform tool. (http://www.blackboard.com/). Finally, one Polish library uses wbtserver. WBT-Server is an LMS platform. It is a tool to create advanced eLearning courses (http://www.4system.com/index.html).

Content of the courses is prepared by librarians themselves. At one Polish library librarians are supported by external specialists. In each country (but not each library) multimedia for the courses prepare librarians together with other (often external) specialists.

E-learning library induction courses are usually prepared by 1-4 librarians. B-learning courses in turn are prepared by 1-10 teaching librarians (1-3 in Poland, 4-5 in Finland, 10 in Estonia).

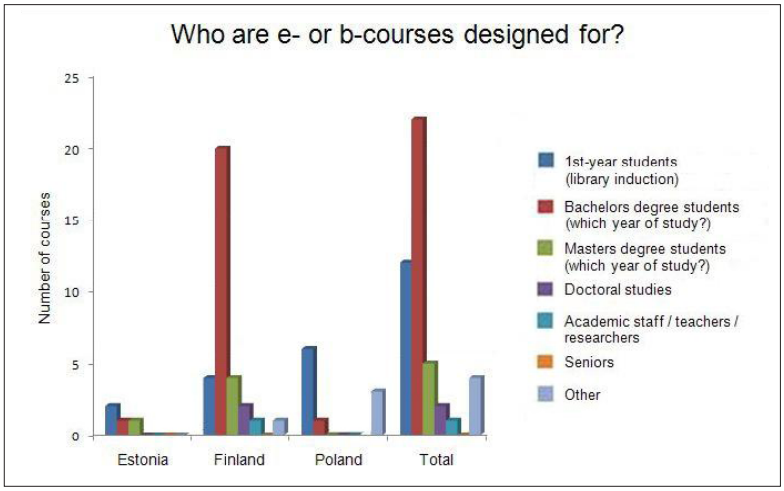

Fig. 2. Provision of library e- or b-courses for various target groups

Most of the libraries have declared library induction to be delivered as an e-learning course. However, significant difference between Finland and other countries can be observed as far as target groups for library e-learning courses are concerned. In Finland librarians seem to focus on e-courses for bachelor's degree students, whereas in Estonia and Poland librarians tend to focus on newcomers. No library surveyed at any country organizes e- or b-learning courses for seniors.

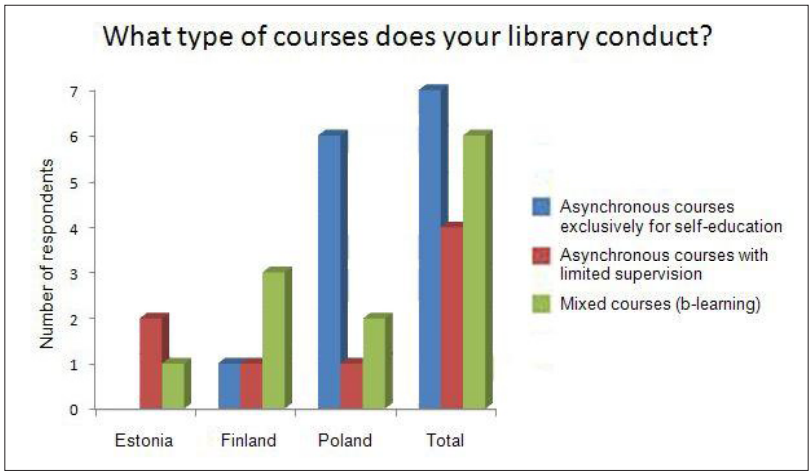

Fig. 3. Types of distance learning courses provided by libraries

Asynchronous courses exclusively for self-education i.e. without any supervision or assistance of librarians are most popular in Poland (6 libraries). In Finland only one library out of four conducts such a course. The library in Estonia prefers asynchronous courses with limited supervision (for master's and bachelor's degree students) but it provides also a mixed course for first-year students. Mixed courses are most popular in Finland. In Poland only two libraries have declared provision of such courses.

Number of hours that students are expected to devote for completing the course depends on the type of the course and varies from 1-5 hours for library induction to 88 for Information Literacy courses for master's or bachelor's degree courses.

How many hours are students expected to spend on each course?	Estonia	Finland	Poland
First-year students (library induction)	5	2-6	1-2
Bachelor's degree students	88	5-20	15
Master's degree students	88	20-52	
Academic staff / teachers / researchers		6-79	
Seniors	0	0	0
Other		12	5

Tab. 2. Number of hours that students are expected to devote for completing individual courses. Source: Results of the authors' research

Average numbers of participants of e-courses per year vary from 20-30 master's degree students in Estonia, through 1720 bachelor's degree students in Finland, to around 2600 first-year students at the Poznań University of Technology, Poland. None of the respondents reported number of academic staff – teachers or researchers – who have completed e-courses organized by the library.

3.2. Learning outcomes

Answers to the question about the assessment of learning outcomes require further discussion. Over 50% of respondents use course assessment surveys in the end of the course. However, it is not clear what the surveys refer to i.e. if they really measure knowledge gained by course participants or if they refer to organizational issues and overall perception of the course. In that context the authors have focused on the analysis of other measures declared to have been used. They are represented on the right side of the graph in fig. 4. An interesting one is comparison of the results of

the same test delivered before and after the course. In e-learning environment it is an easy task which may prove advantageous both for the course creators and users. High scores of many participants at the beginning of the course may imply the need to bring up the course to a higher level. Participants in turn like to start the course with the test to see if they really need to take the course and to preliminarily check the time they would really have to spend on it.

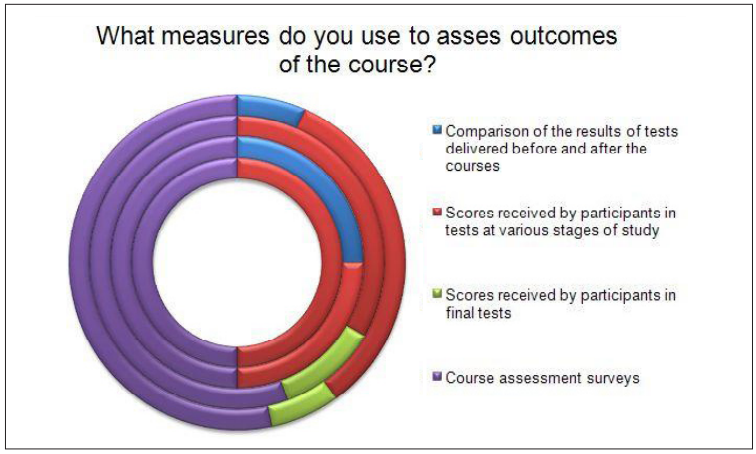

Fig. 4. Learning outcomes. Most internal circle presents measures used in Estonia. Further circles in outward direction refer to Finland and Poland. The very external one shows measures declared to be used by the libraries in total

Assessment of learning outcomes may be formative or summative. Formative outcomes through some feedback help students to compare their results with ones expected to be achieved. They are often used at various stages of study. Summative outcomes produce a grade e.g. as a result of solving a test, usually in the end of the course.

3.3. Cooperation with parent university units

At most universities there are separate units responsible for the provision of e-learning courses. Usually they serve the whole university despite the fact that sometimes they are located within the structure of one specific faculty. However, this information refers only to those universities whose library declared to have provided e-courses. Out of libraries which have not organized e-courses only one Polish library indicated that in 2010 a new unit for e-learning had been established. On the other hand, the question about the existence of specialized e-learning units at the university was located in the end of the first part of the survey and might have been overseen by those libraries, which had not provided any e-courses.

In Estonia librarians conduct library induction courses individually, whereas advanced courses in cooperation with faculties. In Finland some courses are conducted exclusively by librarians and other in cooperation with faculties, depending on the university. Finally, in Poland two libraries declared that they get significant support from the e-learning unit in creation and supervision of e-courses. Majority of Polish libraries both prepare and conduct e-courses themselves. At one Polish technical university an e-learning unit is located within the structure of the library. Therefore the library coordinates all the conceptual and technical issues concerning distance education of its parent institution.

The best way to deliver courses prepared by librarians effectively and efficiently is to integrate them with academic curricula. Library courses may be embedded into academic curricula as separate obligatory or optional modules. They may also constitute an integral part of any subject course. In that case they usually take into account subject specific context.

Embedding courses into curricula automatically makes them obligatory for groups of students. They are assessed and evaluated as part of students assignments. It is important, because if IL courses are not obligatory and assessed they are much less likely to be used. Such solutions encourage also partnership of academic and library staff. The survey has shown that such solutions are quite common in Finland and Estonia. In Latvia it refers to a traditional course prepared several years ago for chemistry department within a Dedicate Project with gradually implemented elements of e-course. In Poland IL courses integrated into curricula are either part of other courses or are taught as a separate course.

Finally, library courses, both library induction and more advanced IL courses, may supplement overall academic offer without any requirements to be used. Unfortunately, it seems to be most often case especially in Poland which have been proved by the results of the survey concerning credit points for completion of IL course.

Only one library (Cracow University of Technology) has declared IL course to be conducted at one university department as a separate optional module for one credit point. In Estonia in turn students get credit points for attending any library courses: one for the induction course, four for bachelor's and master's degree courses. In Finland all the libraries conduct library courses for one to three credit points.

Generally, Polish libraries offer mostly open self-paced on-line tutorials usually with very limited assessment. They are most often general and refer to overall information about library resources and services. A few examples of courses with direct relation to specific disciplines (most often chemistry) or focused on a selected set of documents or services have been mentioned.

A good Polish example of a library induction e-course is the very first such a course provided by the library of Poznan University of Technology. It offers informative lessons, presentations, examples, several tests at various levels of study and final assessment test to be completed in the end of the course.

Are the courses included in academic curricula?	Estonia	Finland	Poland	Universities
yes, as seperate courses				
obligatory	x	x	x	Finland – three universities Poland – three universities, courses obligatory for certain users
optional	x	x	x	Finland – three universities Poland – one university
yes, as part of courses				
obligatory	x	x		Finland – three universities
optional		x		Finland – two universities
No				Poland
Do students get credits for completing courses in IL? If yes – how many?	1 to 4	1 to 3	1	Estonia: library induction – 1, bachelor's degree course – 4, master's degree course – 4, Finland (all four universities) – 1-3 Poland bachelor's studies course – 1

Tab. 3. Inclusion of library courses into academic curricula and credits received by students for completing the courses

Last but not least, the real partnership of academics and librarians testifies their cooperation in the development and enhancement of education processes. Estonian and Finnish librarians declared to have cooperated closely with academics on new curricula including modern information resources and technologies. In Poland, apart from unique libraries, most declared lack of any liaisons with academics in the process of e-learning organization or new courses design. Moreover, resistance from faculties against library courses e-learning initiatives can be often observed, especially as far as integration with academic curricula is concerned.

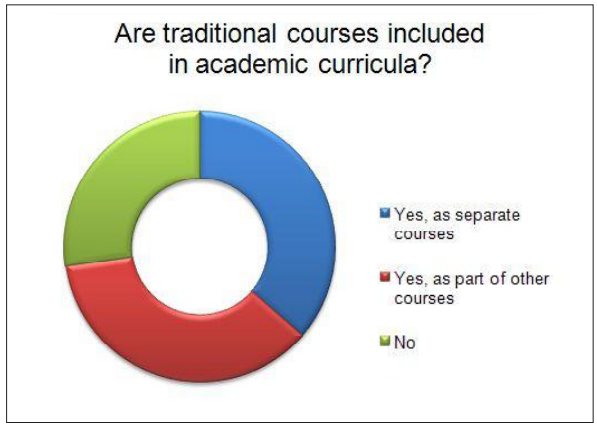

Fig. 5. The inclusion of traditional courses into academic curricula

Embedding library e-courses into academic curricula depends on several issues, starting with an overall information literacy policy on the national level, through the IL guidelines or recommendation adopted at universities, to local background and university managers' perception of the role of IL in general and the partnership of academics with the library staff in the education processes in particular. Inclusion (or not inclusion) of traditional courses into curricula at individual universities seems to have affected importance and perception of IL e-courses within academic societies. Academic libraries in all four countries have been involved in library and information education for a long (and comparable) time. However, it is noticeable that educational activities in Estonian and Finnish libraries were better integrated into overall academic activities than in Latvia and Poland. It seems that that fact has affected further solutions concerning embedding e-courses into curricula. At the moment most of library e-courses in Estonia and Finland are highly valued at universities, which is reflected in the existing credit points system. Similar courses in Poland are in general non-credited, optional, supplementary service provided by libraries. It reflects to some extent relatively low status of librarians in academic society caused also by underestimation of information literacy skills and knowledge.

3.4. Plans for the future

Most of libraries in all the four countries plan to develop e-courses in near future i.e. within two years. Only one respondent did not know about future plans yet, however this librarian wrote that they were aware of such a necessity ("we don't know when, but we know we need it"). As far as future e-learning activities of libraries which already provide e-courses are concerned, they declare to enhance the existing ones, develop new ones or have them translated into English.

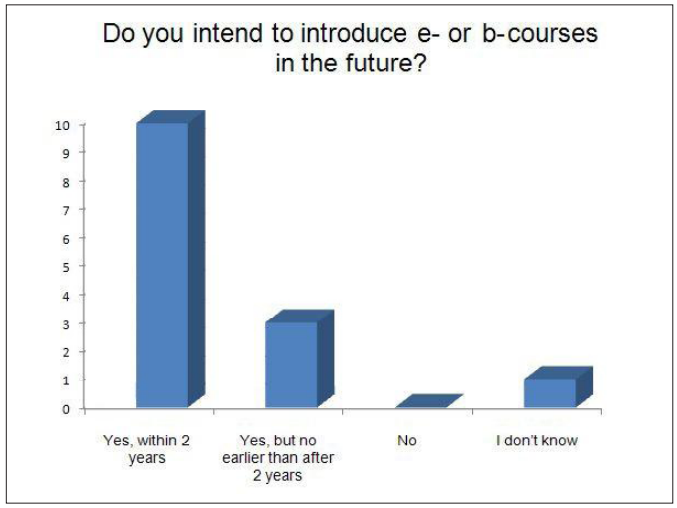

Fig. 6. Respondents' plans for the future concerning introduction or development of distance-learning courses

Most of Polish technical academic libraries plan to deliver library courses for various groups of users within two years. No significant preferences can be observed as far as type of such courses is concerned. Six libraries plan to introduce asynchronous courses with limited supervision, six ones prefer courses without any supervision or assistance, five libraries would like to introduce b-learning. Similar trends can be observed in all four countries surveyed. It is important that several libraries have noticed the requirement to train librarians how to deliver e-courses (e-courses for teaching e-librarians).

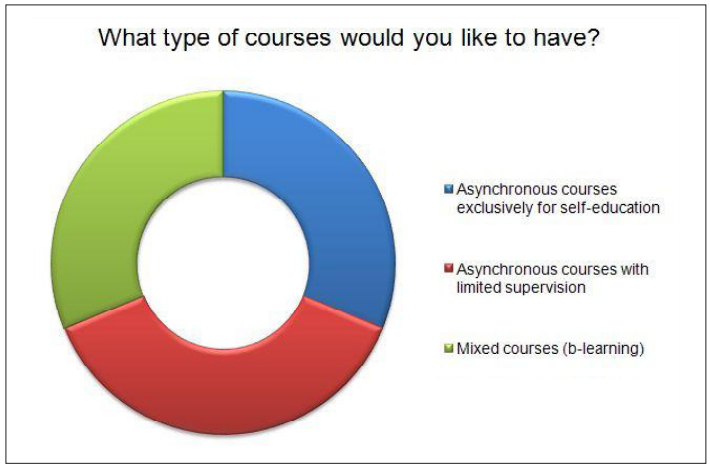

Fig. 7. Most desired types of future courses

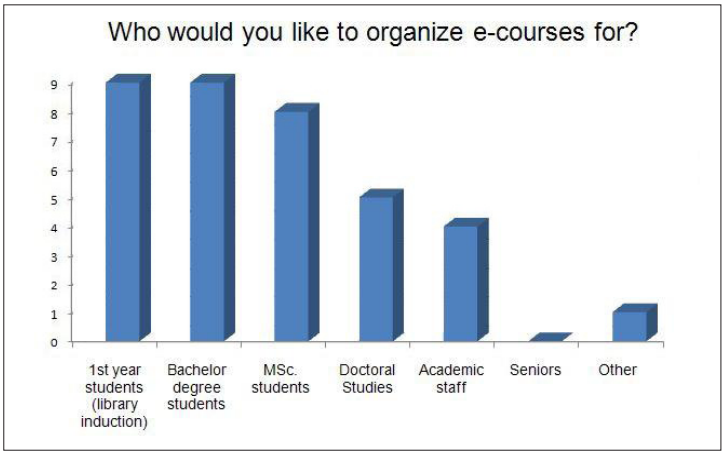

Fig. 8. Desired target groups of future e-courses

3.5. Funds for library training

Educational activities conducted by libraries are funded mainly from the library budget. Some additional funds come from parent universities. Libraries have also reported some funds from external EU grants. Two libraries organize paid e-courses for external users.

4. Conclusions

Librarians of technical university libraries surveyed are well aware of the need to teach users (and non-users) of their libraries how to efficiently use information resources. In fact they have been doing it for many years [Appendix C]. Traditional IL courses at most of libraries started to have been delivered at the very beginning of these libraries activities, most often in the fifties or sixties of the previous age. As the information technology development has dramatically changed the ways of access to documents, solving information problems (i.e. identifying information needs, locating adequate sources, extracting and organizing relevant information and synthesizing information from various sources) is crucial for students and academics. Many experiments confirm that explicit and intensive instruction is necessary, because solving information problems is a complex cognitive skill [Wopereis, I., 2008]. Such instruction varies from upgrading basic library skills to comprehensive IL education including advanced research skills, assessment of resources and ethical issues (e.g. plagiarism).

Distance learning is used as a supplement to existing traditional user education in order to support student-centered learning. However, respondents indicated that

the use of e-tools in library education will increase significantly in the next two years. There are a number of internet-based models of learning (which is an interesting topic for further research) and several e-learning platforms in use. Less than half of the libraries surveyed make use of educational e-learning platforms for teaching so far. Some misunderstanding concerning e-courses can still be observed – some libraries treat web tutorials (especially those with multimedia included) as e-courses. It is important to remember that e-learning courses as an element of distance education include instructional provisions, tutorial interactions, individual control of learning, as well as monitoring of practice.

In view of several research into learning outcomes of instruction provided in different environments [Baile, P. 2002, Wopereis, I., 2008, Xu, Y., 2010] e-learning courses are a desirable form of learner-centered instruction. Therefore libraries generally tend to introduce e-courses in addition to or instead of traditional face-to-face classes. Generally, desired types of future courses i.e. asynchronous courses without any assistance of a tutor, asynchronous courses with a limited supervision or mixed learning (b-learning) have received equal support from respondents i.e. similar numbers of respondents declare to provide new asynchronous courses with or without supervision and b-courses in the next two years. It is noticeable that libraries which have been using e-platforms for many years develop mainly b-courses and so are their plans for the future, whereas novices in e-learning plan to introduce mainly courses without any supervision to replace traditional ones. On the other hand, several libraries declare that after few years of exclusively e-courses practice they have noticed the need to deliver traditional ones as well. These remarks should not be deminished when transition to e-courses is considered.

Furthermore, libraries which have been providing e- or b-courses on various levels for many years (Estonia, Finland) most often have them embedded into academic curricula. Students develop their information competencies throughout the whole process of study. Apart from library induction, which most often is compulsory for novices, the IL courses are either stand-alone modules for 1-4 ECTS credit point or they are embedded into subject courses and supervised by subject librarians. If library courses are embedded into academic curricula "students have ongoing interaction and reflection with information" within units and across year levels, throughout their course. Students skills develop progressively from first year and throughout subsequent years of the course" [Australian and New Zealand Information Literacy Framework, 2004]. The same rules apply both to distance and traditional courses. In Latvia (Riga Technical University) IL courses are not embedded into academic curricula but they are obligatory for certain groups. Also in Poland IL courses are not obligatory, except a few universities and certain groups of users. It results in relatively low interest of students in courses provided by libraries. Significant discrepancy can be observed between relatively high numbers of first-year students trained

by Latvian and Polish librarians at the beginning at their study and low numbers of students participating in advanced IL courses for bachelor's or master's studies [Appendix C]. Thus it seems crucial for the improvement of students IL competencies to strive for embedding professional IL courses into academic curricula.

Estonian and Finnish libraries focus on IL courses for bachelor's and master's studies. Libraries without e-teaching background in turn tend to focus on library induction e-courses. On one hand, such an approach can be easily explainable – library orientation courses are good starting points for IL education of students. On the other hand it is important to have in mind, that IL competencies should be developed at further stages of subject education, preferably with some group work, discussion and assistance (b-courses).

Interrelations between faculties and libraries are an important factor in IL education at the academic level. Estonian and Finnish respondents reported active participation of librarians in academic curricula development and e-learning organization at their parent universities. The role of librarians in academic teaching in Poland is often diminished. However, some positive examples of librarians participation in academic education processes have been noticed, including an example of Lodz Technical University Library responsible for coordination of e-learning activities within the parent institution. It is advisable that libraries try to persuade academic authorities to have them involved in teaching processes. It requires openness and flexibility of both sides, however, pro-active approach of libraries is of unquestionable importance. "After many years of librarians working hard to build working relationships with academic colleagues, e-learning offers the potential to engage as true partners in learning and teaching and in some instances to take the lead" [SCONUL, 2005]. And this opportunity should not be missed.

In some countries academic organizations and library associations for many years have been working on standards, guidelines and recommendations concerning distance education for academics, librarians and policy makers. Activities of UK Joint Information Systems Committee (JISC) [http://www.jisc.ac.uk], the Society of College, University and National Libraries (SCONUL) [http://www.sconul.ac.uk] or Universities and Colleges Information Systems Association (UCISA) [http://www.ucisa.ac.uk/], Association of College and Research Libraries ACRL [http://www.ala.org/ala/mgrps/divs/acrl/index.cfm] or Australian and New Zealand Institute for Information Literacy (ANZIIL) [http://www.anziil.org/] can inspire academic institutions not only in their parent countries but also in other ones to innovative use of digital technologies. Librarians from the countries less-experienced in e-learning may learn the lesson from those who have already worked out standards and guidelines for IL education.

Finally, the survey described above was conducted by librarians and referred to IL education as defined in 1.2. In other words it focused on the development of basic and advanced personal IL skills. It should be noticed however, that there are many concepts of information literacy. Carla Basili discusses three perspectives for analysis of IL: socio-political (IL as an educational policy goal), disciplinary (as a form of study) and cognitive (as a form of personal competences) [2006, 2008]. "Adoption of a comprehensive policy on Information Literacy is crucial for its institutionalisation within the Higher Education context" [Basili, C., 2006].

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Appendix A

SURVEY FORM

I. Organization of courses

1. Does your library conduct any e- or b-courses?

a. Yes

b. No – *go straight to III.*

2. Who are e- or b-courses designed for?

a. 1st year students (library induction)

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

b. Bachelor's degree students (which year of study?) . . . . . .

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

c. Master's degree students (which year of study?)

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

d. Doctoral Studies

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

e. Academic staff/ teachers/

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

f. Seniors

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

g. Other (who?)

No of courses: . . . . . ; Average No of participants per year: . . . . . .

Time students are expected to spend on the course (No of hours): . . . . . .

3. What type of courses are they?

a. Asynchronous courses exclusively for self-education (without any assistance of teachers or tutors)

b. Asynchronous courses with limited supervision (i.e. tutor replies for questions and/or assists with assignments)

c. Mixed courses (b-learning) – synchronous on-site (in the library or at the departments) and asynchronous distance course (on the platform), a teacher / tutor involved in the whole course

d. Other (please describe)

4. How long has your library been involved in e-teaching? (the year your library started e-teaching) .....

5. How many library staff is involved in e-teaching?

a. Asynchronous:. .....

b. Mixed .....

6. Which e-learning platform is used for e-learning at your library / university? (name, version) .....

7. Who prepares content for the courses?

a. Librarians themselves

b. Librarians supported by other specialists

c. External specialists (where from?) .....

8. Who prepares multimedia?

a. Librarians themselves

b. Librarians supported by other specialists

c. External specialists (where from?). .....

9. Is there at your parent university an organizational unit responsible for distance-learning

a. Yes

b. No

II. Embedding the library e-courses into academic curricula. Involvement of the Library in supporting distance learning at the parent university

1. Does your library conduct e-courses individually or in cooperation with university departments (faculties, other units)?

a. Individually

b. In cooperation with other units (which ones? Who plays the role of a coordinator?) .....

2. Are the courses included in academic curricula?

a. Yes, as separate courses

- obligatory
- optional

b. Yes, as part of other courses

- obligatory
- optional

c. No

3. Do students get credits for completing courses in IL?

a. Yes (how many?) .....

b. No

4. Has your library been involved in the process of e-learning courses design and/or management at your parent university? .....
.....

5. What measures do you use to assess outcomes of the courses?

a. Comparison of the results of tests delivered before and after the courses

b. Scores received by participants in tests at various stages of study

c. Scores received by participants in final tests

d. Course assessment surveys

e. Other (please specify)

f. Your comments .....
.....

III. Plans for organizing e- or b-learning courses in the future?

1. Do you intend to introduce e- or b-courses in the future?

1. Yes, within 2 years
2. Yes, but no earlier than after 2 years
3. No (why not?)
4. I don't know.

2. Who would you like to organize e-courses for?

i. 1st year students (library induction)
ii. Bachelor's degree students (which year of study?)
iii. Master's degree students (which year of study?)
iv. Doctoral Studies
v. Academic staff/ teachers/.
vi. Seniors
1. Other (who?)

3. What type of courses would you like to have?

1. Asynchronous courses exclusively for self-education (without any assistance of teachers or tutors)
2. Asynchronous courses with limited supervision (i.e. tutor replies for questions and/or assists with assignments)
3. Mixed courses (b-learning) – synchronous on-site (in the library or at the departments) and asynchronous distance course (on the platform), a teacher / tutor involved in the whole course
4. Other (please describe)

IV. Teaching background (traditional teaching)

1. **How long has your library been involved in traditional teaching?** (the year of the first course).
2. **How many people (on average) do you train per year?**
    a. 1st-year students (library induction)
    b. Bachelor's degree students (which year of study?)
    c. Master's degree students (which year of study?)
    d. Doctoral studies
    e. Academic staff / teachers / researchers
    f. Seniors
    g. Other (who?)
3. **How many library staff is involved in traditional teaching of the following groups?**
    a. 1st-year students (library induction)
    b. Bachelor's degree students (which year of study?)
    c. Master's degree students (which year of study?)
    d. Doctoral studies
    e. Academic staff / teachers / researchers
    f. Seniors
    g. Other (who?)
4. **Are traditional courses included in academic curricula?**
    a. Yes, as separate courses
        i. obligatory
        ii. optional
    b. Yes, as part of other courses
        i. obligatory
        ii. optional
    c. No

V. Funds for educational activities of the library

What are the sources of funds for educational activities conducted by your library?

a. From the budget of the library
b. From the budget of the parent university
c. From external sources (e.g. grants)
d. From other sources (please, specify) .....

Your comments: .....
.....
.....
.....

INFORMATION ABOUT YOUR PARENT UNIVERSITY
(as of 31 December 2010)

No of full-time students .....
No of extra-mural students .....
No of academic staff .....

INFORMATION ABOUT THE LIBRARY

No of library staff .....
No of registered users .....
including:
No of students of the parent university .....
No of employees of the parent university .....

Appendix B

Libraries of technical universities which responded to the survey

Estonia

Tallinn University of Technology

Finland

1. Aalto University
2. Lappeenranta University of Technology
3. Tampere University of Technology
4. University of Oulu

Latvia

Riga Technical University

Poland

1. Białystok University of Technology
2. University of Bielsko-Biała (Academy of Technology and Humanities)
3. Częstochowa University of Technology
4. Silesian University of Technology
5. Kielce University of Technology
6. Koszalin University of Technology
7. AGH University of Science and Technology
8. Cracow University of Technology
9. Lodz University of Technology
10. Poznań University of Technology
11. Rzeszów University of Technology
12. West Pomeranian University of Technology
13. Warsaw University of Technology
14. Wrocław University of Technology

Appendix C

Brief description of public technical libraries which responded to the survey and their parent universities

Estonia

University	Library
Tallinn University of Technology (TUT) http://www.ttu.ee/ The only national technology university in Estonia, it supports sustainable development of Estonia through scientific research and science-based higher education in the field of engineering, technology, natural and social sciences. TUT was founded in 1918 and is one of the largest universities in Estonia. It has over 14 000 students and personnel of about 2000. The university offers engineering and economics diploma, bachelor`s, master`s and doctoral degree programmes. University comprises of 8 faculties, 33 departments, 9 faculty research centres, 10 affiliated institutions. More details: http://www.ttu.ee/tallinn-university-of-technology/about-tut/facts-and-figures/	**Tallinn University of Technology (TUT) Library** http://www.ttu.ee/library/ Founded in 1919, is the university centre of library services and electronic information. It provides information for academic, research and development activities at TUT. As the only scientific technical library in Estonia it is open for public use. Library has about 26 000 users, including 10 000 external users. Annual visits reach 285 000, an average number of daily visits is about 1800 - 2000. Library holds over 720 000 titles of printed books or journals. In 2010 university`s computer network allowed access to nearly 65 000 e-journals, 60 000 e-books and different bibliographic, review and fact related databases. Searches to licensed databases: 470 000, with downloading of nearly half a million documents. User education – 847 hours of user training sessions with 2278 participants. Library staff – 74 (FTE). Total staff, incl. TUT Press and TUT Museum, – 84 Library induction since 1961 More details: http://www.ttu.ee/library/about-library/the-library-in-figures/

Finland

University	Library
Aalto University was established in January 2010 as merger of three Finnish higher education institutes: Helsinki School of Economics, Helsinki University of Technology and University of Art and Design Helsinki. Aalto University is a foundation-based university. Aalto University is second biggest university in Finland with its 19 500 students. Staff is 4 300. Since the beginning of year 2011 it comprises of six schools: School of Engineering, School of Chemical Technology, School of Science, School of Electrical Engineering, School of Economics and School of Art and Design. http://www.aalto.fi/en/about/statistics/	**Aalto University Library** consists of three libraries: Arabia Campus Library, Otaniemi Campus Library and Töölö Campus Library. The Otaniemi Campus Library's predecessor Helsinki University of Technology library was founded in 1849. The Otaniemi Campus Library has organized e-courses since 1994. The library personnel have been very active in piloting new pedagogical methods and ways to organise trainings.
	Helsinki University of Technology Library data as of 2009: 8 300 users (6 400 internal, 1 900 external) No of visits – 233 000 No of visits to library's web pages – 9 953 387 User education – 3 929 hours with 2 636 participants Library staff – 57 Library induction since 1970 E-learning courses – yes, since 1994 http://lib.tkk.fi/Julkaisut/vuosikertomus2009.pdf
Lappeenranta University of Technology http://www.lut.fi/en/lut/Pages/Default.aspx	**Lappeenranta University of Technology Library** http://www.lut.fi/en/library/pages/default.aspx Library induction since 1978 E-learning courses – yes, since 2001

Tampere University of Technology http://www.tut.fi/en/	**Tampere University of Technology Library** http://www.tut.fi/library/dlib/ Library induction since 1975 E-learning courses – yes, since 1996
University of Oulu http://www.oulu.fi/english/	**Science and Technology Library Tellus** http://www.kirjasto.oulu.fi/index.php?id=533 Library induction since 1985 E-learning courses – yes, since 2007

Latvia

University	Library
Riga Technical University (RTU) http://www.rtu.lv/en/ RTU is the only multi-branch technical university in Latvia. RTU was founded in 1862 and is the oldest higher educational establishment of Latvia. The principal goal of RTU is to provide the Latvian national economy with qualified human resources for its stable growth and development. At the moment RTU is the second largest university in Latvia and there are almost 16 000 students, including 12 000 full-time students, 4000 part-time students and about 1000 academic staff. The university offers academic and professional study programmes at three levels – undergraduate, postgraduate and doctoral studies To date the RTU comprises 8 faculties. There are also part-time and correspondent departments. The RTU has branches in the 3 largest towns of Latvia – Daugavpils, Liepaja, and Ventspils. No of full-time students: 12 000 No of extra-mural students: 4 000 No of Academic staff 800	**RTU Scientific Library (SL)** http://www.rtu.lv/en/content/view/3771/2037/lang,en/ Founded in 1862 is the only library in Latvia having a rich collection of information resources on engineering and architecture to be drawn on as a relevant source of reference for developing the Latvian national economy. The collection of the Scientific Library is being developed in accordance with the areas of RTU academic activities and research. The library provides readers with an access to a collection of about 1.800,000 printed items on natural sciences, engineering, architecture, economics and other scientific areas. The holdings are located in the central building and in eight branch libraries as well as in lending departments and reading-rooms. The library users have access to the library information and electronic resources (e-books, e-journals and databases) through the library homepage and the university portal ORTUS. There were 250 430 searches to databases and

	about 600 000 downloads in 2010. The Library has about 19 000 users, who visited library 350 000 times. No of library staff: 47 (FTE). Total staff – 59 No of registered users: 19 082 including: No of students of the parent university: 16 000 No of employees of the parent university: 400 Library induction since 1999 E-learning courses – no

Poland

University	Library
Białystok University of Technology http://www.pb.edu.pl/en/ Data as of 31 Dec 2010 No of full-time students: 9 723 No fo extra-mural students: 3 877 No of academic staff: 676	**The Library of Białystok University of Technology** http://www.pb.edu.pl/en/library.html No of the library staff: 44 No of registered users: 9 421 including: No of parent university students: 7 758 No of parent university staff: 820 Library induction since 1970 Average number of users trained per year: • No of first-year students (library induction): 800 • Bachelor's degree students: 90 • Master's degree students: 90 No of library staff involved in traditional teaching: 4 • For first-year students (library induction): 4 • For Bachelor's degree students: 4 • For Master's degree students: 4 E-learning courses - no

University of Bielsko-Biała (Academy of Technology and Humanities) http://www.ath.bielsko.pl/english/ Data as of 31 Dec 2010 No of full-time students: 4 522 No of extra-mural students: 2 868	**The Main Library of the University of Bielsko-Biała (Academy of Technology and Humanities)** http://www.bibl.ath.bielsko.pl/index_en.php No of the library staff: 14 No of registered users: 8 909 including: No of parent university students: 8 352 Library induction since 1983 Average number of users trained per year: • No of first-year students (library induction): 1 400 • Bachelor's degree students: 0 • Master's degree students: 0 No of library staff involved in traditional teaching: • For first-year students (library induction): 4-5 E-learning courses - no
Częstochowa University of Technology http://www.pcz.pl/english/ Data as of 31 Dec 2010 No of full-time students: 7 145 No of extra-mural students: 4 610 No of academic staff: 817	**The Main Library of Częstochowa University of Technology** http://www.bg.pcz.pl/ [in Polish] No of the library staff: 38 No of registered users: 7 234 including: No of parent university students: 5028 No of parent university staff: 837 Library induction since 1950 Average number of users trained per year: • No of first-year students (library induction): 1502 • Bachelor's degree students: 22 • Master's degree students: 25 • PhD students: 20 • Academic staff of parent university: 60 • Other (students of high schools) : 17

	No of library staff involved in traditional teaching: • For first-year students (library induction): 10 • For Bachelor's degree students: 3 • For Master's degree students: 3 • PhD students: 6 • Other: 4 E-learning courses – no
Silesian University of Technology http://www.polsl.pl/en/Strony/0_welcome.aspx Data as of 31 Dec 2010 No of full-time students: No of extra-mural students: No of academic staff:	**The Main Library of Silesian University of Technology** http://www.polsl.pl/Jednostki/RJO1/Strony/witamy.aspx [in Polish] No of the library staff: No of registered users: including: No of parent university students: No of parent university staff: Library induction since 1975 Average number of users trained per year: 1 000 No of library staff involved in traditional teaching: • For first-year students (library induction): 2 • For Bachelor's studies: 4 • For Master's studies: 2 • For PhD studies: 2 • For academic staff of parent university: 2 E-learning courses – yes, since 2009
Kielce University of Technology http://www.tu.kielce.pl/en/	**The Main Library of Kielce University of Technology** http://lib.tu.kielce.pl/ [in Polish] E-learning courses – no

Koszalin University of Technology http://www.tu.koszalin.pl/eng/ Data as of 31 Dec 2010 No of full-time students: 6 135 No of extra-mural students: 3 268 No of academic staff: 525	**The Library of Koszalin University of Technology** http://biblioteka.tu.koszalin.pl/ [in Polish] No of the library staff: 18 No of registered users: 7 122 including: No of parent university students: 9403 No of parent university staff: 958 Library induction since 1984 Average number of users trained per year: • No of first-year students (library induction): 2000 E-learning courses – yes, since 2010
AGH University of Science and Technology http://www.agh.edu.pl/en Data as of 31 Dec 2009 No of full-time students: 23 261 No fo extra-mural students: 8 585 No of academic staff: 4 072	**The Library of AGH University of Science and Technology** http://www.bg.agh.edu.pl/EN/index.php?p=home&skin=1 No of the library staff: 85 No of registered users: 29 933 including: No of parent university students: 25 290 No of parent university staff: 3088 Library induction since 1970 Average number of users trained per year: • No of first-year students (library induction): 569 (in the academic years 2009 / 2010) • Master's studies: 384 No of library staff involved in traditional teaching: • For first-year students (library induction): 26 • For Master's studies: 6 E-learning courses – yes, since 2010

Cracow University of Technology http://www.en.pk.edu.pl/ Data as of 31 Dec 2010 No of full-time students: 12 025 No of extra-mural students: 4 349 No of academic staff: 1 181	**The Library of Cracow University of Technology** http://www.biblos.pk.edu.pl/ No of the library staff: 72 No of registered users: including: No of parent university students: No of parent university staff: Library induction since 1960 Average number of users trained per year: • No of first-year students (library induction): 4 000 • Bachelor's degree students: 65 • Master's degree students: 40 • Academic staff of parent university: 300 • Other (Library and Information (LIS) students of other universities 80 No of library staff involved in traditional teaching: • For first-year students (library induction): 14 • For Bachelor's studies: 2 • For Master's studies: 5 • For the academic staff of parent university: 5 • Other: 2 E-learning courses – yes, since 2009
Technical University of Lodz http://www.p.lodz.pl/en/index.htm Data as of 31 Dec 2010 Total No of students: 19 879 No of full-time students: 14 859 No of academic staff: 1505	**Library of the Technical University of Lodz** http://bg.p.lodz.pl/astr_2.htm E-learning courses – yes (introductory courses for teachers and learners - how to use the e-learning platform)

Poznań University of Technology http://www2.put.poznan.pl/en Data as of 31 Dec 2010 No of full-time students: 13 513 No of extra-mural students: 5 990 No of academic staff: 1 244	**Poznan University of Technology Library** http://www.library.put.poznan.pl/en/index.html No of the library staff: 44 No of registered users: 11 340 including: No of parent university students: 10 009 No of parent university staff:1 029 Library induction since 1963 Average number of users trained per year: • No of first-year students (library induction): 2600 • Bachelor's studies: 600 • PhD studies: 20 • Academic staff of parent university: 100 No of library staff involved in traditional teaching: • For first-year students (library induction): 1 • For Bachelor's studies: 5 • For PhD studies: 2 • For the academic staff of parent university: 2 E-learning courses – yes, since 2008
Rzeszów University of Technology http://portal.prz.edu.pl/en/ Data as of 31 Dec 2010 No of full-time students: 12 118 No of extra-mural students: 3 699 No of academic staff: 706	**The Rzeszów University of Technology Main Library** http://biblio.portal.prz.edu.pl/en/ No of the library staff: 38 No of registered users: 14 024 including: No of parent university students: 12 762 No of parent university staff: 842 Library induction since 1980 Average number of users trained per year: • No of first-year students (library induction): 3 600

	No of library staff involved in traditional teaching: • For first-year students (library induction): 10 E-learning courses – no
West Pomeranian University of Technology, Szczecin http://www.zut.edu.pl/index.php?id=6930 Data as of 31 Dec 2010 No of full-time students: 10 173 No of extra-mural students: 3 039 No of academic staff : 1 114	**Main Library of West Pomeranian University of Technology** http://bg.zut.edu.pl/ No of the library staff: 79 Library induction since 1954 Average number of users trained per year: • No of first-year students (library induction): 2 577 • Bachelor's and master's studies: 1 182 • PhD studies: 45 No of library staff involved in traditional teaching: • For first-year students (library induction): 18 • For Bachelor's and master's studies: 8 • For PhD studies: 2 E-learning courses – no
Warsaw University of Technology http://eng.pw.edu.pl/ Data as of 31 Dec 2010 No of full-time students: 23 797 No of extra-mural students: 8 103 No of academic staff: 2 430	**Main Library of Warsaw University of Technology** http://www.bg.pw.edu.pl/eng/ No of the library staff: 125 (incl. 15 students) No of registered users: 53 905 Library induction since 1980 Average number of users trained per year: • No of first-year students (library induction): over 4000 • Master's studies: 700 • PhD studies: 400 • Academic staff of parent university: 60

	No of library staff involved in traditional teaching: • For first-year students (library induction): 10 • For Master's studies: 5 • For PhD studies: 3 • For the academic staff of parent university: 3 E-learning courses – yes, since 2011
Wroclaw University of Technology http://www.portal.pwr.wroc.pl/index,242.dhtml Data as of 31 Dec 2010 No of full-time students: 27 361 No of extra-mural students: 5 568 No of academic staff: 1 835	**The Library of Wroclaw University of Technology** http://www.bg.pwr.wroc.pl/index,162.dhtml No of the library staff: 171 No of registered users: 33 556 including: No of parent university students: 26 321 No of parent university staff:2 546 Library induction since 1956 Average number of users trained per year: • No of first-year students: 0 • Bachelor's studies: 8 868 • Master's studies: 506 • PhD studies: 150 • Academic staff of parent university: 100 • Other (e-journals – course for librarians and staff of other institutions): 40 No of library staff involved in traditional teaching: • For Bachelor's studies: 36 • For Master's degree students: 15 • For PhD studies: 11 • For the academic staff of parent university: 11 • Other: 13 E-learning courses – no

SCIENTIFIC INFORMATION IN TECHNOLOGICAL UNIVERSITY LIBRARIES: A STUDY IN THE BALTIC STATES

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Abstract

Scientific information provided by university libraries is to a certain extent the basis for students' research and development, degree of study, and professional specialization. Students' use of online resources is growing rapidly. As a rule, most scientific scholarship available in university libraries today is electronic. Nearly all of the journals of natural and exact sciences, as well as of engineering, have electronic versions and a certain number are available only electronically.

The purpose of this paper is to analyze essential data concerning details of the use of library services, financing, and the costs of procuring scientific information at the Tallinn University of Technology Library (TUTL), the Scientific Library of Riga Technical University (RTUL), and Vilnius Gediminas Technical University Library (VGTUL). These three libraries were selected for three reasons. First, they are all members of the International Association of Scientific and Technological University Libraries (IATUL). Second, they all have been long-time cooperative partners in library research and development as well as in library exchanges of important publications. Third, they are the leading technical university libraries in the Baltic countries.

This paper begins with an overview of the situation of technical university libraries in the Baltic States during the Soviet era. It analyzes the more recent use of resources together with the costs and financing needed to acquire scientific information. Analysis of the financial opportunities of the three leading technical university libraries indicates that due to disparate funding levels, the opportunities for these libraries to spend resources on scientific information differ greatly from institution to institution. Limited resources account for the considerably lower frequency of library usage, especially of electronic information, in poorly financed libraries.

Keywords: university libraries; benchmarking; library services; scholarly communication; financing; expenditure; performance measurement

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Introduction

For Eastern Europe, and for the relatively newly democratic Baltic countries in particular, it is quite natural to look to what is happening to the north. The Nordic libraries were all developed in democratic societies that valued enlightenment and free access to information, and where libraries were considered to be core institutions in society (Larsen 2004). The Nordic countries have a centuries-long tradition of maintaining libraries and of providing access to information, knowledge, and culture to all citizens (Axelsson & Niegaard 2005). However, in contrast to the Nordic countries, Eastern European national library and information development programs have been very weak. According to Virkus (2005, p. 11), academic libraries in the former communist countries of Eastern Europe have experienced a period of rapid and profound change during the last decade, in connection with the transformation in the political and economic structures, changes in territorial and administrative situations, as well as with the rapid development of information and communication technologies.

As a service-providing institution, the planning of university library work is based on the quality of that service, the satisfaction of the information consumer, and the aquisition of necessary resources. In the current economic situation, it is essential to be familiar with statistical indicators related to the use of scientific information acquired by technical university libraries. It is generally known that technical and scientific information is significantly more expensive than information in humanities or social sciences.

The paper proceeds as follows. First, past trends and general developments in university libraries across the Baltic States are reviewed, followed by a short overview of the formation of the TUTL, RTUL, and VGTUL. Current trends in TUTL, RTUL, and VGTUL are then analyzed based on the annual reports of the TUTL (the collection of annual library statistics is nationally regulated in all developed countries in accordance with ISO 2789:2006) as well as a questionnaire sent to the directors of the RTUL and VGTUL. The questionnaire consisted of closed-ended questions based on the internationally developed statistical data of libraries. In order to evaluate the electronic services and resources in the university libraries included in this paper, the following data and performance indicators were consid-

ered (based on, but not limited to, the international standards ISO 2789:2006 and ISO 11620:2008):

(1) Data and performance indicators related to the usage of library services and resources: number of registered users, number of visits, number of virtual visits, number of licensed databases, number of collections on physical careers, number of e-publication titles, number of loans, and number of content units downloaded.

(2) Data and performance indicators related to the expenses of the library: acquisitions costs, the expense of e-documents as a percentage of the acquisition costs, and acquisition costs per student.

The period between 2004 and 2008 was chosen for analysis because during that time the availability and usage of e-services in libraries in other parts of Europe increased considerably, as did the cost of electronic scientific information. Moreover, these were the first 5 years of membership in the European Union for the Baltic countries.

General Developments of Acquisitions Politics in University Libraries of the Baltic Countries

The cultural, ethnic, and linguistic identities of the three Baltic States – Estonia, Latvia, and Lithuania – are unique, despite many years under the political and economic sway of larger neighbors. After independence following World War I, libraries in the Baltic countries were organized in a manner befitting civilized countries, in conformity with the perceptions of European democratic states on the role of libraries and their tasks in society (Pavļuts 2004, p. 15). Academic libraries after World War II formed an important part of the state system of scientific and technological information in the Soviet Bloc countries (Virkus 2005). University libraries in the Baltic countries were comparatively well funded, with huge collections and multiple copies of books, including a large number of textbooks. Pupeliene (2004, pp. 80–1) observed: 'If a university librarian in Soviet times had been asked what his library was famous for, most of them first of all would mention a big and rich collection that allowed the library to provide each student with a copy of the most needed textbooks'. Acquiring books published in the Soviet Union posed no significant problem; books were cheap and acquisition funds were increased according to the need. However, access to books published in Western countries, even via inter-library loan, was extremely difficult (Kikas 1993, p. 31). Foreign books (any books printed outside the Soviet Union after 1917) were viewed with suspicion in the Soviet Union. However, foreign literature published before 1917 was generally not prohibited, with the exception of certain banned authors. For example, during the period 1945–1950, Tallinn University of Technology Library received only 240 foreign publications, most of them journals, registered as single copies. In 1954 the

Ministries of the Soviet Union, through their Foreign Relations Departments, began to supply their libraries with foreign literature, but all the acquisitions first had to pass through the GLAVLIT (The Main Directorate for Literary and Publishing Affairs) (Veskimägi 1995, pp. 28–9).

Thus, there was a lack of information with regard to Western literature, while Soviet publications were in great supply (Kikas 1993, p. 31). World literature in general and literature in the social sciences in particular were only partially present because of severe currency limitations and for ideological reasons (Virkus 2005, p. 12). For example, of all journals, scientific books, and textbooks acquired in the 1980s, two-thirds were in Russian. In earlier decades, the share of literature in Russian was even greater (Kikas 1993, p. 31). Foreign literature was acquired only under strict censorship. The Soviet academic library could be characterized more as a books and periodicals depository than as a working service unit in higher education (Pupeliene 2004, p. 81). Virkus (2005, pp. 12-3) writes:

Because of poor technological infrastructure as well as for political reasons, the access to electronic information was limited. The online-access to national and other databases in the region as well as the international supply via ohter electronic means came under the strict control of the respective ministries. For example, in the Soviet Union, major research libraries in all republics, including in Baltic countries, had access via [the] Republican Automated System of Scientific and Technological Information (RASNTI) to online databases of Moscow's All-Soviet Institute for Scientific and Technical Information (VINITI), which had access to Western databases via a Center at Vienna. Because of the 'iron curtain', news from the librarians' world could only be accessed through some Soviet library journals or separate publications allowed by censors. There was no possibility of direct cooperation with librarians from any Western country, and there only were some contacts with colleagues from Warsaw Bloc countries (Pupeliene 2004, p. 81). Moreover, there was no official association or consortium of libraries or librarians in Soviet Estonia, Latvia, and Lithuania.

A large portion of the literature acquired in the early 1990s was made up of books received via foreign aid, most of which were published in the 1970s and 1980s. The Soviet principles for acquiring academic literature for university libraries were finally disregarded in the 1990s. Acquiring tens or hundreds of copies of textbooks at the expense of the state could no longer be justified (Kikas 1993, p. 30).

In the early 1990s, the key word to describe the library situation in the Baltic States was 'change'. The Baltic States underwent essential changes in all spheres of life – political, economical, social, and cultural – and so did their libraries. In this context, libraries found themselves free, but poor (Glosiene 2001, p. 11). They suffered from a chronic lack of financing, poor information resources, and underdeveloped library

and information systems and networks. Conflicts arose as a result of the gulf that separated newly published literature and readers' requests. Problematic too were the fast-growing number of documents, the poor quality of access to them, and inflexible library work protocols (Kikas 1993; Veskimägi 1995; Virkus 2005).

The mid-1990s marked a turning point in many aspects of library development in the Baltic States (Glosiene 2001, p. 11). Libraries had to redefine their role in society, and to restructure to meet changing needs and demands. Among the most important of these needs was direct access to the world's major databases, abstract bulletins, and catalogues of the world's largest libraries, which would provide an opportunity to join the international inter-library loan system. This facilitated the availability of publications and affected the acquisition policies of the libraries. In acquiring foreign literature, priority was given to journals, followed by reference books, monographs, and textbooks (Kikas 1993, pp. 31-2).

Over time, the libraries became gateways to sources of information about the world and took part in creating an information society. The integration of the Baltic States into the European Union effectively began this important social development in these countries.

Tallinn University of Technology Library, Scientific Library of Riga Technical University, and Vilnius Gediminas Technical University Library

The Tallinn University of Technology Library (TUTL) was founded in 1919, following the establishment of the university in the previous year. The library's primary goal is to provide library and information services in the fields of engineering and entrepreneurship. It must also support the academic, research, and development activities of the Tallinn University of Technology and provide Estonian industry and business with current information (Tallinn University of Technology Library 1919–1989, 1989). Since 2004, TUTL has held the status of the research and development institution of the university.

The Scientific Library of Riga Technical University (RTUL) is the oldest postsecondary research library in Latvia. RTU is the only technical post-secondary institution in Latvia, and RTUL is the only Latvian library with an extensive collection of literature on engineering and architecture (2.3 million units). The history of the library is closely connected with the history of RTU. The formation of the library dates back to 1862 based on the donation of 1048 books by the Riga Manufacturing and Stock Exchange Committee, which laid the foundation of the library collection. In 1969, the Library of the Riga Polytechnical Institute was awarded the name 'Scientific Library' (Riga Technical University 2007, pp. 78, 80). In addition to the RTUL, the Latvian Academic Library, which also contains considerable scientific and technical publications from around the world, operates in Latvia.

The Vilnius Gediminas Technical University Library (VGTUL) was established in 1962 as a library of the Institute for Higher Technical Education in Vilnius, Lithuania, which at that time was a department of Kaunas Polytechnical Institute (KPI). Together with its parent organization, the library went through many changes. Among the three Baltic states, technical education is at its highest level in Lithuania. Today, more than 40 other technical libraries operate in Lithuania in addition to VGTUL. Among them are the Library of Kaunas University of Technology and the Lithuanian Technical Library.

Usage of Scientific Information in Baltic Technical University Libraries

Quantitative indicators, such as size, capacity, and costs, have traditionally measured the value of a research library. The purpose of such library statistics in the Soviet period was to 'prove' the priorities of Soviet economics in comparison with those of the free market.

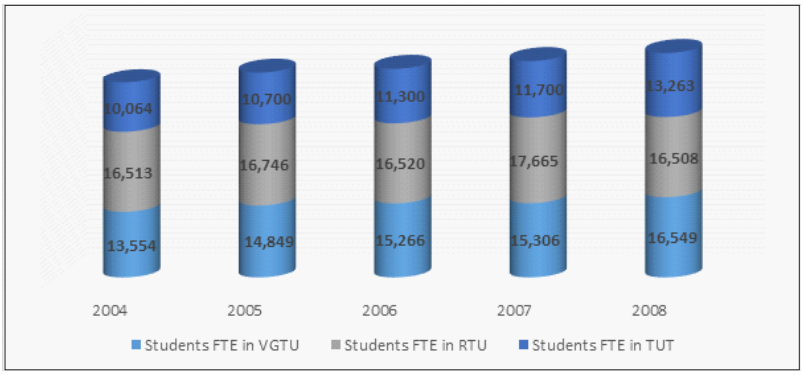

FIGURE 1. Number of FTE students in technical universities, 2004–2008
Sources: Annual reports of TUTL and the answers of the directors of RTUL and VGTUL.

In this respect, there was no difference between library statistics and economic statistics in general. Thus, for example, to furnish proof that the Soviet people had been reading more than anybody else in the world, librarians often had to falsify data, arrange them appropriately, and frame them in an advantageous context in order to reach the desired conclusions. More attention began to be paid to the quality of reader service and to analyzing it in more diverse ways, relying on two international standards: ISO 11620:2008 Information and documentation. Library performance indicators and ISO 2789:2007 Information and documentation. International library statistics. The collection, systematization, and analysis of such statistical data

remain vital (Jõgi & Kont 2009, p. 166). A comparison of the number of FTE (full-time equivalent) students at TUT, RTU, and VGTU, as given in Figure 1, indicates that it has been steadily growing at TUT and VGTU, while at RTU student enrolment fell in 2008 to sub-2004 levels. The numbers in Figures 1 and 2 indicate that the role of technical university libraries is much broader, offering different services to different users. Students constitute only one part of the readership, while lecturers, scientists, and all ohter practitioners interested in engineering and exact sciences form a considerable portion of users as well (for example, about 30% in TUTL).

The largest increase in the number of registered readers has occurred in VGTUL. While the number of students using VGTUL has increased by around 3000 in 5 years, the number of registered users during this period has roughly doubled from 9830 readers in 2004 to 18,920 in 2008. The number of registered users in TUTL has remained relatively stable during the same period.

Table 1 compares the numbers of regular and virtual visits to the three libraries. According to the ISO 2798:2007 Information and documentation – International library statistics, 'Virtual visit is defined as user's request on the library website from outside the library premises, regardless of the number of pages or elements viewed. Virtual visits are comparable to traditional visits'. The number of virtual visits depends on several factors, which include whether the library strictly abides by the definition of a virtual visit, what software is used to calculate the number of virtual visits, and whether the library actively encourages the use of electronic materials.

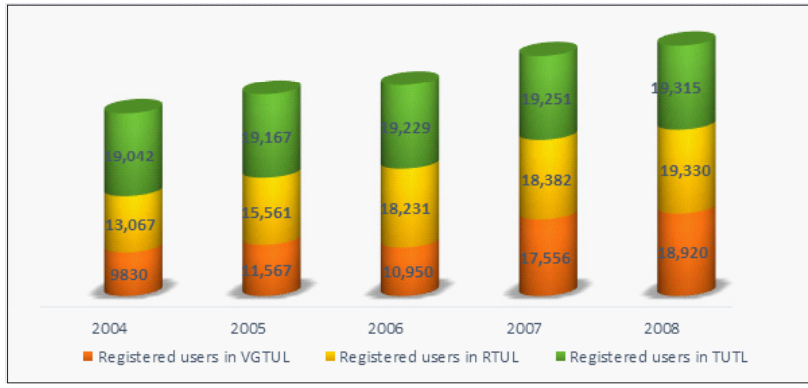

FIGURE 2. Number of registered users in technical university libraries, 2004–2008.
Sources: Annual reports of TUTL and the answers of the directors of RTUL and VGTUL

The data in Table 1 suggest that TUTL is quite active in directing its patrons toward electronic materials. Traditional loans and downloaded electronic content units in the technical university libraries are compared in Table 2. Traditional library loans

TABLE 1. Number of library visits/number of virtual visits, 2004–2008.

Library	2004	2005	2006	2007	2008
TUTL	234,949/*	245,236/ 5,950,159	246,658/ 5,851,807	247,263/ 5,749,833	246,529/ 9,100,123
RTUL	229,047/ 20,086	229,876/ 21,664	230,476/ 14,023	232,274/ 747	205,209/ 1,284,176
VGTUL	428,981/ 195,990	389,978/ 180,135	522,384/ 269,956	374,934/ 145,358	380,959/ 162,307

* *Data not available.*
Sources: Annual reports of TUTL and answers of the directors of RTUL and VGTUL.

taken into consideration include loans in home, on-site loans, loans through the self-rental machine, and renewals. As per ISO 2798:2007, content downloaded is defined as 'content unit (full-text article or abstract) that is successfully requested from a database, electronic serial or library digital collection'. The number of content units downloaded depends not only on the number of databases, e-journals, and e-books acquired by a library, but also on how actively the library encourages its readers to use electronic materials.

The largest research libraries in Estonia, Latvia, and Lithuania began ordering databases on CD-ROMs in 1991–1992. The greatest expansion in the use of online databases started with EBSCO Publishing in 1998–1999. This database was first offered in Estonia by the Consortium of the Estonian Library Network (ELNET Consortium), established in 1996 as a non-governmental organization.

TABLE 2. The use of the collections: traditional loans/content units downloaded

Library	2004	2005	2006	2007	2008
TUTL	193,246/ 136,244	193,497/ 418,538	193,518/ 545,804	193,960/ 684,623	193,545/ 436,788
RTUL	752,243/*	756,730/*	670,780/ 95,000	630,261/ 74,213	352,680/ 229,754
VGTUL	521,257/ 54,467	487,174/ 56,758	450,277/ 45,410	376,801/ 47,619	720/ 62,019

* *The number of content units downloaded in RTUL was not calculated until 2006.*
Sources: Annual reports of TUTL and answers of the directors of RTUL and VGTUL.

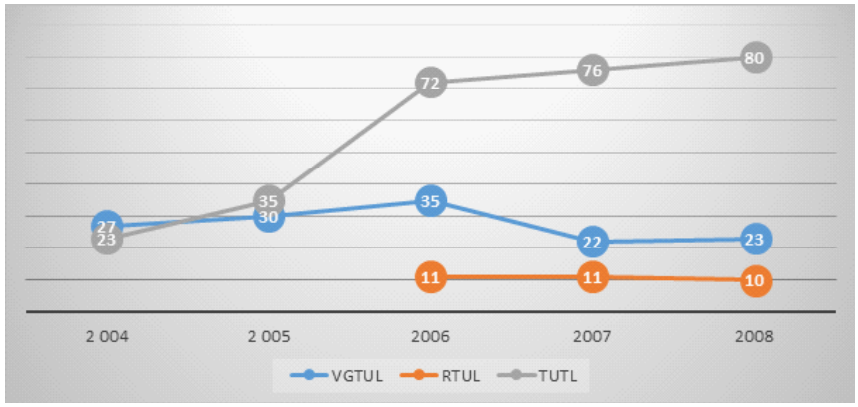

FIGURE 3. Electronic collection: number of licensed databases, 2004–2008

**The number of licensed databases in Scientific Library of Riga Technical University (RTUL) was not counted prior to 2006.*

Sources: Annual reports of TUTL and the answers of the directors of RTUL and VGTUL.

The data in Figure 3 show that the number of licensed databases has grown rapidly only in TUTL. While in 2004 the number of databases in VGTUL exceeded those in TUTL (27 and 23, respectively), by 2008 the number of databases had decreased to 23 in VGTUL and increased to 80 in TUTL. The number of databases in RTUL is extremely small. The limited number of electronic resources almost certainly accounts for the considerably lower numbers of virtual visits and content units downloaded in RTUL and VGTUL as compared to TUTL (see also Tables 1 and 2).

The data in Table 3 were collected according to ISO 2789:2006 Information and documentation – International library statistics. This table compares collections on physical carriers (including books and periodicals on paper, CDs, VHS tapes, DVDs, and similar media) versus electronic collections (e-books and e-periodicals) of Baltic technical university libraries. From 2004 to 2008, the number of collections on physical carriers remained stable in all three libraries. However, in TUTL the number of e-journals and e-books more than doubled during this period. From 2006 to 2008, the number of electronic materials also increased in VGTUL. Unfortunately, the managers of RTUL do not deem it necessary to include the number of titles of electronic publications in the annual statistics of the library. To identify the reason for this, the author inquired of the Deputy Director of RTUL why the library does not keep records about the number of e-journals and e-books contained in licensed databases or purchased as separate e-journals. Deputy Director Sarmite Krauze explained: 'We know the number of titles in the databases, but we have not as yet counted these titles separately. But we are looking at this question. I think we will likely change our practice' (Krauze 2011).

TABLE 3. Physical versus electronic collections (including e-books and e-journals), 2004–2008

Library	2004	2005	2006	2007	2008
TUTL	718,536/ 31,000	723,136/ 37,800	723,906/ 43,800	733,486/ 55,000	723,630/ 69,474
RTUL	2,333,910/*	2,301,858/*	2,205,044/*	2,084,972/*	1,961,419/*
VGTUL	575,931/*	574,488/*	580,904/ 20,489	583,365/ 26,868	582,672/ 39,419

* *The number was not counted.*

Sources: Annual reports of TUTL and answers of the directors of RTUL and VGTUL.

Thus, while by 2008 the three libraries had nearly equal number of readers, the services offered by these libraries were far from being at the same level. The number of databases available in RTUL was very small, only 10 or 11. In VGTUL, the number of databases in 2008 remained at the same level as in TUTL in 2004, while by 2008 the number of databases in TUTL had increased to 80. All this affects the small number of virtual visits and downloaded e-content units in RTUL and VGTUL. Unfortunately, RTUL does not currently keep statistics as detailed as those of TUTL and VGTUL regarding their electronic collection. So we cannot know how many e-journals and e-books are in this library. However, RTUL has at least kept records about the number of licensed databases and the number of content units downloaded since 2006.

Acquisitions Costs for Scientific Information in the Technical University Libraries

Since the three Baltic states joined the European Union on 1 May 2004, all foreign electronic publishers changed their pricing policies for these countries. The Baltic region is no longer considered a region of transition and therefore many past benefits (for example, discounts offered to developing countries) have disappeared. The turning point in the funding of university libraries in Estonia came in 2002, when the Minister of Education and Research began to regulate the requirements for academic libraries. The regulation allocated funding from the state budget for the acquisition of scientific information; one part of the funding went directly to university libraries to support the acquisition of scientific information and the second part went to the Consortium of the Estonian Library Network (ELNET) for common procurements of e-journals and scientific databases. The Library Information Network Consortium of Latvia (LINC) is a non-profit state limited liabil-

ity company established in 1997 according to the model of the Estonian ELNET Consortium and by order of the Cabinet of Ministries of Latvia. The Consortium is financed from the state budget. In 2001, the LINC Project 'Electronic publications for Latvian libraries' was initiated in cooperation with the international consortium eIFL.net (Electronic Information for Libraries). The purpose of the project was, and is, to provide libraries with a wide choice of electronic resources in different fields in order to improve the quality and competitiveness of library services as well as to study interests and needs of Latvian libraries in the electronic publications field (Luse 2004).

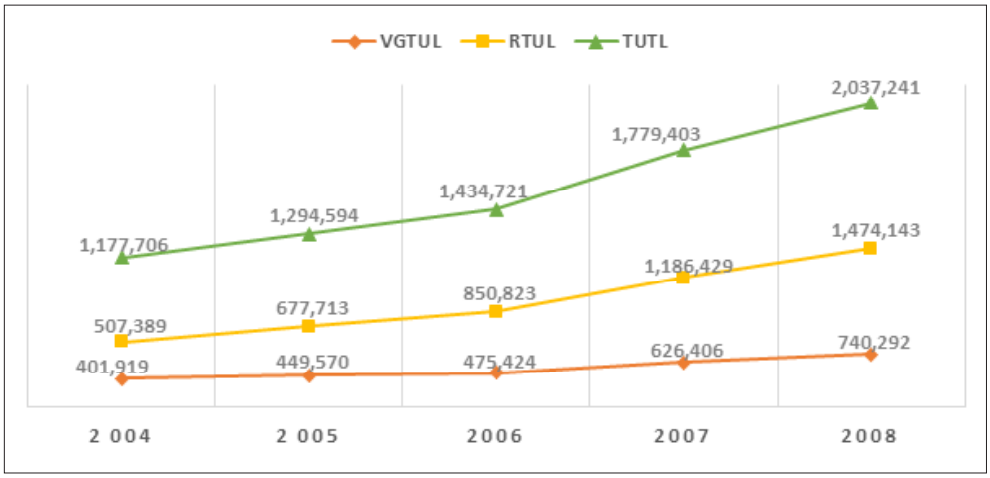

FIGURE 4. The dynamics of the budget of the technical university libraries, 2004–2008 [in euro]
Sources: Annual reports of TUTL and the answers of the directors of RTUL and VGTUL.

According to Emilija Banionytė and Aušra Vaškevičienė (2005, p. 80), the greatest obstacle Lithuanian (as well as Latvian) university libraries face when acquiring databases is lack of money. Another problem is the complicated, bureaucratic public procurement tender procedures. Open Society Fund – Lithuania, the first promoter of online databases for libraries, played a significant role in persuading the Ministry of Culture to allot special funds for electronic resources. The ministry was the first governmental agency to begin partially funding subscriptions to EBSCO Publishing in 2001. The Ministry of Education and Science began allotting special funds for database subscriptions in 2003. From the very beginning, Lithuanian libraries decided the funds could be used only as partial payment for foreign online databases. This is because librarians feel more responsibility when libraries themselves share in the cost (Banionytė & Vaškevičienė 2005, p. 82).

The analysis of the financial means of the three libraries in Figure 4 indicates that, due to large budget differences, the levels at which libraries may spend on scientific information vary greatly.

None of the three libraries receives all of its income from the university. For example, TUTL gets most of its financing from the Ministry of Education and Research. In 2008, the share of funds given to TUTL by the university decreased to only 26%, because in 2007 the state budget began to finance the operating costs of research libraries. For this purpose, an additional budget line was created in the state budget for € 2.2 million per year.

TABLE 4. Acquisitions: expenditure on print materials/expenditure on purchase of electronic materials (% of acquisition costs for electronic materials), 2004–2008 [reported in euros]

Library	**2004**	**2005**	**2006**	**2007**	**2008**
TUTL	408,589/ 190,137 (32%)	426,034/ 255,494 (38%)	457,231/ 294,362 (39%)	363,369/ 455,656 (54%)	557,051/ 317,771 (36%)
RTUL	92,997/ 14,136 (15%)	102,822/ 20,104 (16%)	114,098/ 19,019 (16%)	142,064/ 20,536 (14%)	127,216/ 16,438 (13%)
VGTUL	115,002/ 8,468 (7%)	148,957/ 7,158 (5%)	138,873/ 9,934 (7%)	156,809/ 16,070 (9%)	172,523/ 30,861 (15%)

Sources: Annual reports of TUTL and answers of the directors of RTUL and VGTUL.

The university library cannot exist without library material costs, which are one of its biggest expenses (in addition to workforce expenses). The proportion of the expense of e-documents in the acquisition costs is considered an important performance indicator, which has been included in official statistics since 2005 (but which has been recorded by libraries for even longer). Table 4 indicates a difference in the expenses of the libraries, which results in very different levels of financial resources to spend on electronic publications. Poll (2001, pp. 710–1) argues that 'the two most interested stakeholder groups in the case of university libraries are the population the library is set up to serve and the institution to which it belongs'. To measure library quality (that is, whether the library can help to shorten study time, produce graduates who quickly find jobs, support research in an effective way, help to raise

the image of the institution, and be costeffective overall), university libraries are using a performance indicator, acquisition costs per student, as given in Table 5.

TABLE 5. Acquisition costs per student: expenditure on print materials/expenditure on purchased access to databases, e-publications [reported in Euros]

Library	**2004**	**2005**	**2006**	**2007**	**2008**
TUTL	41/19	40/42	40/26	31/39	42/24
RTL	6/0.8	6/4	7/1	8/1	8/1
VGTUL	8/0.6	10/0.5	9/0.7	10/1	10/2

Note: The values presented are calculated as follows: (expenditure on print materials, expenditure on purchase of e-documents, databases)/number of students.
Sources: Annual reports of TUTL and answers of the directors of RTUL and VGTUL.

Acquisition costs for electronic publications per student during the periood 2004–2008 were highest in TUTL, but significantly higher in 2006 and in 2007. At RTUL and VGTUL, per student acquisition costs for both electronic publications and for print materials have been very low. This situation offers little support for students. For example, the director of the University of Latvia Library said in 1999 that the budget for purchasing new books should be 8 Latvian lats (LVL) per student per year, whereas over the last 5 years (see also Table 4), in RTUL between 4 and 6 LVL (€ 6–8) per student per year was received.

Summary

University libraries in the Baltic countries during the Soviet period were mostly a books and periodicals depository rather than a workplace and service unit in higher education. They were rigidly centralized institutions responsible for collecting, preserving, and providing access to information and mainly oriented toward expanding their collections. They were comparatively well funded with large stocks and multiple copies of books including a very great number of textbooks.

This owes to the fact that books published in the Soviet Union were inexpensive and easily accessible. Acquisition funds were increased according to needs. However, access to books published in Western countries was extremely difficult and was only achieved under strict censorship. World literature in general and social sciences publications in particular were only sporadically accessible both due to severe currency limitations and for ideological reasons. Following the restoration of in-

dependence, a number of trends emerged in the mid-1990s. Libraries were unable to satisfy the growing information needs of readers in all fields, but particularly in terms of scientific, economic, and technological information. Thus, libraries needed to re-organize their activities accordingly. For example, all material in libraries became freely available to the public. However, a lack of technology and poor financial resources meant that the service provided was slow and inflexible.

Despite limited financing, there have been many positive changes to Baltic technical university libraries since the mid-1990s. They have become more customer-oriented and are concerned with their collections' relevance to users' needs more than about their collections' size. The main focus in library statistics is put on the customer: for example, the number of users per year, the number of visits per year, the number of loans per year, etc. These are the main indicators used to evaluate progress in libraries and indicate that the Baltics are evolving from the Soviet mentality toward libraries for higher learning, though there is still more to be done.

Nevertheless, poor financial resources remain the most significant factor negatively impacting the development of the Baltic countries' technical university libraries even till the present, especially in the cases of RTUL and VGTUL. There are several possible reasons for this. First, state financing of university libraries has been clearly inadequate in Latvia and Lithuania. (The central technical library in Estonia also needs increased funds to acquire scientific information that meets the needs of university researchers, although its funding is somewhat better.) Second, joint efforts of research libraries to purchase necessary databases for universities have thus far been ineffective in Latvia and Lithuania and considerably more successful in Estonia. In the current economic situation where the budgets of university libraries have been drastically reduced, joint efforts have been made to increase the opportunities of purchasing publications with the support of the European Union Structural Funds.

Third, while TUTL is the only technical library in Estonia, the situation in Lithuania and Latvia is quite different. More than 40 technical libraries operate in Lithuania; in Latvia, the Latvian Academic Library operates in addition to the RTUL. Thus, the unequal financial situations of the libraries discussed in the paper might not be as great as they seem at first glance. Students, academic staff, researchers, and other interested parties may have the opportunity to go to another technical library to obtain the required information. The funding of these other technical libraries could be a good topic for future research.

Inadequate state support clearly affects the ability of libraries of the main technical universities in the Baltics to supply their readers with scientific information. It could be argued that only TUTL has received adequate financial support. Nonetheless, even for TUTL there is still little reason to be satisfied. As the 2009 annual statistics of technical university libraries are not available to the public yet, it is very difficult

to say how the current economic crisis has financially affected these libraries. Similar benchmarking studies in the future will therefore be necessary to track progress.

Any list of suggested improvements going forward would have to include the following. First, a consortium of the technical universities in the Nordic and Baltic countries should be established. The need for certain specific and expensive databases would well justify that goal. Second, conferences and seminars for employees of libraries of Baltic universities of technology, in addition to the annual conferences of IATUL, need to be organized. This would enable librarians to become more aware of, and learn from, each other's developments, successes, and problems. Third, annual reports and major statistical indicators should be published in English on the homepages of the libraries or on the homepage of IATUL. This should be made compulsory for all IATUL members, as it would enable a more systematic analysis of the developments of libraries of universities of technology of different regions.

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COST ACCOUNTING AND MANAGERIAL ACCOUNTING: APPLICABLE METHODS FOR FINANCIAL SCRUTINY IN UNIVERSITY LIBRARIES?

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Abstract

As we move through the financial crisis that hit Europe, which unfortunately has had an impact on university libraries, too, there is likely to be an increased pressure on librarians to maintain or cut costs, while, at the same time, increasing both the range as well as the quality of library and information services. Libraries today are included in the general demand for cost transparency and effective cost management. With the data they have traditionally collected, libraries can assess in detail the cost of their collections. Reliable data on the cost of their services and products is what they need now. The authors of the present paper suggest that university libraries should implement the Time Driven Activity Based Costing (TDABC) method because it is easier culturally to accept by librarians than any other traditional or new cost accounting method – it already considers many aspects that affect employees' efficiency and performance. University libraries should initially implement the TDABC method as a department- or service-based pilot project to detect the actual factors that would hinder the introduction of the method and the resources it would consume, to find optimal solutions to the problems that have become evident, and only then implement the system in full scale in the organisation as an entirety. In the libraries, where new cost accounting methods have already been implemented, it is easier to focus on the next step – to the managerial accounting, which, in turn, provides more rational operation for an organisation and is beneficial to cope with financial crisis. The best method of managerial accounting for university libraries is to combine international library performance indicators (ISO 11620: 2008. Information and Documentation. Library Performance Indicators) with the results of TDABC.

Keywords: cost accounting, managerial accounting, activity-based costing, time-driven activity-based costing, financial crisis, university libraries.

Introduction

Metcalfe and Richards (1993) have argued that reform endeavours in the public sector are targeted to saving or improving work performance. Often broad organisational changes accompany it like the decentralisation, or the reforms of financial management, inculcating the values among employees of public sector, which conduce stronger concentration to services or greater wish to take responsibility for the results. Better management of the public sector is vitally important to achieve economy, effectiveness and expertness in a short- and long-term perspective (Metcalfe and Richards, 1993). In the public sector, performance measurement is made a priority, first and foremost, for the purposes of control and evaluation. The pressure imposed by the public induces that the results of performance measurement are communicated to the community outside the organisation to ensure that the citizens of the state are informed of how effectively their tax money has been spent and services provided. According to Metcalfe and Richards (1993), the potential to introduce better management practices definitely exists in almost every public sector organisation. Cutting costs can have a great influence to organisation and management – it exposes weaknesses and deficits, which can be hidden in better conditions (Metcalfe and Richards, 1993).

Tiiu Valm, former director (1997–2008) of the National Library of Estonia, has investigated the role of libraries in the context of public sector organisations. In her presentation, held at the Doctoral Seminar colloquium in Tallinn University on the 10th of May 2006, she said: 'The function of the public sector is to increase products that market doesn't want to produce at all or produces insufficiently. Certain kind of information can be considered also as a public product and the public sector is responsible for its accessibility. Everyone has a right to get information that is for general use. In order to assure this freedom, states have created necessary base of legislation and the network of institutions in order to assure the functioning of this system – these are libraries. The library, as a public sector organisation performs functions, which are vital from the perspective of large groups of people or the society as a whole. The public tasks of libraries are originated from the public interests, which is the sum of state or community members' private interests. Public interests are also constant supplement of public information resource of libraries, adapting to the changing needs of society, assuring the accessibility of information in a most convenient way for people and a certain quality and quantity of library and information services'. According to Valm, specifying the set of rules pertaining to the rights of legal persons in public law and improving the mechanisms of their functioning would significantly increase the effectiveness of the activities of libraries as the bearers of public administration, boost cooperation between different types of libraries, strengthen the foundations of activities related to financial economics and eliminate

duplication, that is, would enable to make better judgments from organisational and economic perspectives.

Dependence on local government and state finances as well as the increasing prices of publications, electronic databases, etc. have influenced the library and information sector in both positive and negative ways in the decades since the 1980s (Roberts, 2003, p. 463). Libraries have traditionally offered their services free of charge. Higher demand for scientific information, both in the form of printed as well as electronic publications, together with sophisticated electronic instruments for search, reference, and document supply – this meant that there was a clear and continual increasing intensification use. The tendentiously growing number of students continuously accelerates this development. For libraries this means new tasks with new and intensive demands for staff and equipment (Ceynowa and Coners, 2003, p. 9). New services based on expensive licence fees make it economically difficult for libraries to serve with limited and shrinking resources, when price increases exceed the annual increase of library budgets (Haarala, 2004, p. 3). The price inflation, especially in the area of journals, can often only be absorbed by rigid cancellations. In the 1990s, savings in staff and in information resources became common. Downsizing staff was, and still is, a painful operation – civil servants were laid off, and voluntary vacation was recommended. The lack of workforce was evident, and actions were needed (Haarala, 2004, p. 4). To get a better picture of the activities that libraries are actually engaged in and their cost, studies using new cost accounting/costing models in libraries around the world became common.

The present article aims to analyse the necessity to implement modern managerial tools – cost accounting and managerial accounting – in university libraries.

The methods of research literature and document analysis are employed in the article.

The first part of the article provides a brief overview about the financial situation in the Estonian libraries as well as some reasons why the situation needs to be changed. This part also deals with the current practices of work performance measurement and need for accounting and managerial information in libraries. The second part presents the analysis of the training, skills, and readiness of library staff to imply new cost accounting systems and managerial accounting for decision-making purposes. The third part describes new cost accounting methods suitable for university libraries and proposes the most applicable amongst these.

The need for accounting and managerial information in libraries

Public sector organisations are generally considered old organisations. Throughout the centuries, public organisations have retained a relatively unchanged hierarchy,

structure and strict rules of procedure, and their long-term status is characterised by a certain inertness, which makes it difficult to carry out rapid changes in public organisations and their structural units.

Libraries can also be considered old organisations. In the current socioeconomic situation, efficiency and performance have become extremely important. Estonian research libraries are still marked with the signs of their past legacy, i.e. burdened by their inheritance from the Soviet times. When Estonia shifted from the socialist controlled economy to the capitalist market economy, it set tasks, completely different from the previous ones, and, thus, a need for the change to both organisations as well as individuals. Libraries are so far not accepted market economy though twenty years have passed from the turn of the regime. Libraries have always been carriers of old culture and changes in their structure are slow. There have been a number of cases of redundancy, but this has, however, not substantially contributed to the libraries' more effective and efficient functioning. The staff of research libraries also is generally of old age or older than average and, regrettably, often not apt for innovation. In the library, the words 'efficiency', 'productivity' etc. were rarely used during the Soviet times (and still are) except in their most pejorative sense. To talk about the number of books catalogued per hour by a cataloguer was and still is to move beyond the accepted professional norms. The concept is not culturally accepted in the context of library work. On this background and in the situation of present economic crisis, a conflict has evolved where the work organisation inherited from the past regime hinders dealing with the demands of market economy and all this in the situation, where effectiveness and performance should be kept in mind as it is impossible to carry on the old way with the present available resources. It is challenging to cope with the same or reduced resources in managing the same processes and activities, so that the quality of the result would not be affected. University libraries also face the challenge of the lack of effective staff, who have necessary skills and competencies to respond to new and changing circumstances.

Both profit-making as well as non-profit making organisations are concerned with cost accounting for management purposes. The implementation of cost accounting systems in libraries has been treated as a technical innovation rather than an organisational or management innovation. Driven by the recent financial crisis, business and public sectors have been forced to reassess and reform their activities. In economically successful times, not much attention is paid to effectiveness, but in hard times it becomes very essential. Therefore, reform efforts in the public sector are aimed to save money and to improve work performance.

Current work performance measurement and evaluation system in libraries has been based on the following international standards:

- ISO 2789:2006. Information and documentation. International library statistics.
- ISO 11620:2008. Information and Documentation. Library Performance Indicators.

ISO (International Organization for Standardization) International Standards ensure that products and services are reliable and of good quality as well as give state of the art specifications for products, services and good practice, helping to make them more efficient and effective. For organizations, they are strategic tools that reduce costs by minimizing waste and errors and increasing productivity.

For the data about library work performance would to be internationally comparable, these two standards are applied in the daily activities of different types of libraries around the world. Thus libraries know precisely into which categories their costs belong. The operating expenditure of libraries are divided according to ISO 2789:2006 as follows: salaries and wages (including employee benefits, social costs, etc.), costs of acquiring documents for the collection, administrative costs, maintenance of buildings, collections, etc., rental costs or depreciation costs of buildings and equipment, and other operating expenses (heating, lighting, electricity, etc.). Value-added taxes, sales and service taxes or other local taxes are normally included, unless a performance indicator is used for international comparisons. Personnel costs account for the largest item of expenditure for libraries, followed by acquisition costs, administrative costs and other costs. However, libraries lack a specific overview of the activities between which these costs are divided. Even if libraries have precise knowledge of how much was spent, for example, on each acquired publication, it is very difficult to determine the entire cost of the processes of acquisition and cataloguing. The personnel costs related to the processing of an acquired publication are added to the purchase price of the publication. The more new books are acquired that need to be registered, placed on shelves, etc., the more staff and time is needed and the bigger the costs of these activities grow. Acquisition costs of electronic materials might also not be lower. For instance, negotiations regarding the purchase of licences for electronic materials can be much more time-consuming than those for printed publications or journals. The use of some electronic materials requires specific equipment and computer workstations. Furthermore, the services related to electronic materials, in turn, require more highly skilled and higher paid personnel.

According to Wood (1985), there are several reasons, why libraries have been slow not only to adopt cost analysis, but consistent application of cost accounting and managerial accounting principles among libraries is being practiced slightly. Firstly, the library, frequently a service department or even independent structural unit of a larger organisation/institution, such as a university or a local government, may not have been called to detail all of its costs or justify specific programs based on cost-benefit analysis or other similar techniques. The second reason is that the method

for deriving the library's budget in one institution will not be the same as in another institution. As a result, cross-institutional comparisons are difficult, if not possible (Wood, 1985, p. 3-4). There is also a belief that public sector organisations have less incentive to be efficient and this is related to the principle of budgetary. Indeed, the budget does not depend on the efficiency and performance of the public organisation. Because of the lack of control, public sector organisations are not too often interested in saving their budgetary funds. If an organisation or its department strives to be financially effective and save money, it may result in a lower budget for the next year.

This has been the case, for example, with Estonian university libraries: in economically successful times, budget surplus of the library at the end of the fiscal year was seen as a bad indicator for the library as a structural unit of the university. At the end of 2008, however, when it became apparent that the economic crisis would considerably affect the funding of universities in public law, saving money and building up reserves became relevant rather unexpectedly. Layoffs, compulsory unpaid leave of the workforce and the shortening of opening hours, etc. were decisions that had to be taken in 2009 by the managements of several libraries in order to guarantee the functioning of the organisation.

The primary purpose for using cost accounting is to provide information that is useful for managerial decision making. Drawing on Wood (1985, p. 17-19) and Chimato (2009), management decision areas include:

- *Budget preparation* – cost analysis, not only of the library as a whole, but of specific departments and services in particular, improves administrator's knowledge to allocate library resources effectively. The development of cost centres and the use of standardised cost accounting procedures in libraries is a positive step toward both budget preparation as well as fiscal control.
- *Planning or justification of services* – cost analysis can facilitate decisions such as whether to discontinue the service due to low use and high cost, or which service to initiate. The assignment of weighted factors (i.e. how important is this service to the patron or the library) to specific services, in conjunction with cost analysis, would enhance the quality and objectivity of the decision.
- *Staffing* – staffing decisions, such as the number of professionals in some library department, are facilitated, when the true cost of specific service is known. Cost accounting studies provide the basis for decisions to change staffing patterns, alter services, add personnel or make savings in staff and in services. But being a manager requires also caring for employees. During tough times managers may feel the need to become more hard-edged and demanding in an effort to get more out of less people or resources. Being a caring and compassionate manager simply means showing concern for staff in ways that help them improve performance and grow.

- *Comparison with other libraries, departments or services* – establishment cost centres within libraries and use of standardised cost accounting principles would provide comparative data between departments and services for use within a library and with ohter libraries. Internally, cost accounting provides a mechanism for comparison, and evaluation of services can help to determine whether these services should be continued, modified, or replaced.
- *Communication with administration* – department managers most provide relevant information about their department to their library director, who in turn will communicate this information to the institution's administration (for example, to the university administration or ministry officials in the case of the university library or to the responsible official in local government in the case of the public library). Administrators, whether the ministry, university or local government, are used to speak in 'dollar terms'. Information is not free and this fact must be communicated to higher administration.
- *Long range planning* – cost analysis is an important part of the decision making, which is necessary for the development and implementation of a strategic plan (Wood, 1985, p. 17-19; Chimato, 2009).

According to Ceynowa (2003, p. 26): 'In library cost accounting, the structure of the accounting and stirring systems is significantly determined by the fact that libraries are not manufacturing units – but service institutions.' Reviewing economic publications, one can observe that service institutions, when compared with industrial companies, show a low state of development in regard to cost analysis. Cost performance in libraries needs to be evaluated to determine how efficiently services are being provided. Therefore, providing services, not making a profit, is the major reason for controlling costs in libraries.

Are libraries and librarians ready to imply new cost accounting systems and managerial accounting for decision making purposes?

Buser (2007) says: 'When librarians think of accounting, they generally think of budgets. However, accounting includes planning and control activities broader than creating budgets.' As Hayes (1990) said: 'Although library professionals use the specialized library definitions and language, they should not forget that much of what they do is really founded on basic business accounting practices. Most of library practices are similar to those of private industry. Library managers can learn from the experiences of industry if they can see and translate the common elements into accounting jargon. Besides just buying materials or providing access to information, libraries attempt to add value by arranging them in a specialized manner (classification system), by providing a full inventory (catalog), and by teaching people how to find and even use the materials. By looking at library 'business' through the

accountant's eyes, it can be reevaluate the activities librarians do, the costs involved, and the opportunities for change and enhancement. Using a business models, it can be reexamine the cost accounting analysis and determine what percentage of expenditures could be used for various parts of the retail business.' Thus library business and industry business are not so different as they may seem at first glance.

According to Smith (2002, p. 2-3), the primary nonprofit managerial accounting objective is to provide the greatest amount of cost-efficient services to the largest number of people. The management of large organisations, like university libraries, requires that decisions be made concerning the expenditure of funds, the allocation of resources, the initiation or elimination of services (Hayes, 1983, p. 340) and the management of people in a way that motivates and enables them to work at the highest levels of productivity so that the organisation is thriving in terms of efficiency, effectiveness, quality, and value (Chimato, 2009). According to Stevenson, one particulary difficult nonprofit managerial accounting problem is how to monitor an individual's performance to prevent nonproductive behaviour. In a for-profit organisation, a worker's performance can be easily seen and evaluated, but in most nonprofit organizations, it is particulary difficult to evaluate performance (Stevenson, 2002, p. 8-9). In libraries, cost containment is important, if the organisation is to remain viable, and employees look to management for guidance, and for the tools and resources necessary to make it through crisis.

This is why acquiring primary knowledge of financial, cost and managerial accounting already in the institution of higher education has increasingly become more and more important. In 1983, Hayes was concerned, because 'most library schools, however, pay scant, if any, attention to the basics of budgeting, not even to talk about costing and there has been virtually no attention given to use of accounting data in support of the managerial functions themselves. Even the standard texts on library management devote minimal attention to these issues' (Hayes, 1983, p. 341). Referring to McKay (2003), it was possible, 16 years ago, for Roberts (1984) to say: 'The practice of costing library and information operations and the principles and techniques available to support the economic management of library and information services are one of the weakest areas in the repertoire of library management' (McKay, 2003, p. 1). Since the second half of the 1980s, it has been increasingly important to acquire financial and managerial knowledge in addition to the specialised skills necessary for librarians and information specialists. The managers of libraries have understood the importance of economic aspects in their managerial decisions – the principles and skills necessary for forecasting expenses that support the effective management and administration of library and information services that have until now been the weakest domain in the activities of libraries (Kingma, 1996; McKay, 2003). McKay (2003) still adds: 'I hope that the reader will find confirmation that there is nothing in the financial and accounting management process

that is beyond the skills of information professional who can count, who has basic computer skills, allowing the use of spreadsheets, and who has the will to convince herself or himself of the need to understand that accountants are not the only professionals involved in the overall information unit finance process' (McKay, 2003, p. 3-4). However, in 2007, the Institute of Information Studies at Tallinn University conducted a research into the skills necessary for information and library professionals. In the study, the staff of Tallinn University Academic Library and master's candidates in information sciences were surveyed and the following were among ten skills identified as unnecessary: knowledge of statistical data analysis and statistical software; composing the budget and related financial management skills; strategic planning and project management skills (Virkus, 2007). Future studies will investigate why these competencies are so unnecessary among librarians and students. Unfortunately, this study shows how litte the LIS curricula of Estonia has highlighted the need for financial, accounting and management skills. Although there is a definite need for accounting and managerial information in libraries, the implementation of new methods to obtain and use of this kind of information depends precisely of the librarian financial and management skills.

Cost accounting, financial accounting and managerial accounting – key concepts for a better library management?

There are some terminological distinctions between cost accounting, financial accounting and managerial accounting.

To a certain extent, cost accounting links the financial and managerial accounting, and is also a basis for both financial as well as managerial accounting. It observes how the costs are reflected in corporate financial accounting process (ledgers, formation of the value of supplies and reflection in the balance, formation of the cost of services in profit account), as well as cost analysis and its applications in an organisation wide managerial accounting process (in calculation of the cost of the products and services, budgeting, pricing, etc.) (Smith, 2002). Thus, the information obtained from cost accounting can be used in corporate financial accounting as well as in managerial accounting. Drucker (1990) said that traditional cost accounting hardly provides the information to justify a product improvement, let alone a product or service innovation (Drucker, 1990).

The Activity-Based Costing (ABC) method is the most well known managerial accounting innovation of the last twenty years (Wegmann and Nozile, 2009). It was originally used in the manufacturing sector in response to dissatisfaction with traditional managerial accounting techniques that rely on volume-based methods for allocating overheads to product. The ABC method is a logical approach to the man-

agement of the organisation, which helps to learn to assess the organisation's processes and to identify their cost (Ellis-Newman, 2003).

The testing and implementation of the ABC method is already very common in university libraries around the world (Goddard and Ooi, 1998; Ceynova, 2000; Poll, 2001; Ellis-Newman, 2003; Heaney, 2004; Ching and Leung, 2008). Many library managers have decided that the ABC method is the best of existing cost analysis methods, adapted for evaluating library products. For example, The University of Southampton developed the ABC system already in 1991 and applied ABC methodology to its library services. The ABC approach has resulted in significant improvements. It has 1) created incentives not to over-consume library services and 2) provided a more equitable overhead allocation than traditional systems, and 3) resulted in verified and refuted allocated costs. In 1996, Edith Cowan University (ECU) in Australia adopted ABC. The results enabled the library management to gain information about activity costs that the traditional university accounting system did not provide. The study allowed library managers to determine necessary and unnecessary activities. Only those services that added value were retained whereas services with no added value were discontinued, which resulted in cutting costs for the university. In 1997, the German Research Association carried out the project 'Cost Management for Academic Libraries'. The aim of the project was to test activity-based costing and to develop a method of cost management appropriate to the financial management framework of public sector provision for academic libraries. The project results showed that in view of the fact that budgets have become ever tighter, activity cost accounting helps to preserve and ensure the financial scope of academic information provision.

However, according to Kaplan and Anderson (2004), the ABC appears to cause some significant problems. The fact is that the ABC method can only be implemented in collaboration with the accounting department of university, if the library itself does not have one. In a similar way, many managers, who have tried to implement the ABC in their organisations, have abandoned the attempt in the face of rising costs and employee irritation (Kaplan and Anderson, 2004).

The Time-Driven Activity-Based Costing (TDABC) model can be quickly estimated and installed, since only two parameters are required: (1) the number of time units (e.g. minutes) consumed by the activities related to the cost objects (the activities, the organisation performs for products, services, and customers) and (2) the cost per time unit (Pernot et al., 2007). It is also important to stress, that in the case of the TDABC, the question is not about the percentage of time an employee spends doing an activity (as it is in the case some other performance measurement method – traditional cost accounting, time and motion study method etc), but how long it takes to complete one unit of that activity.

In the context of a university library, the TDABC method has been tested twice in Belgium, at the Arenberg Library of the Catholic University of Leuven. First study focused on the inter–library loan (ILL), the second on the activities of acquisition. The researchers had set up a TDABC system for the ILL service and for the activities of acquisition. The authors of both studies concluded that the TDABC can contribute to the provision of better library services at lower costs, because the TDABC method can be tested and implemented by the departmental managers even for each library department separately and it already considers many aspects that affect employees' efficiency and performance, e.g. rest periods, personnel time for breaks, arrival and departure, and communication and reading unrelated to actual work performance (Pernot et al., 2007; Stouthuysen et al., 2010).

According to Hammer (2001–2007) and Smith (2002), financial accounting is necessary for external information consumers (shareholders, creditors, government agencies, ministries, etc), who are interested in the information related to company/organisation as an entirety. Financial accounting must follow set accounting standards or guidelines, when preparing the organisation's financial statements. The purpose of financial reports is to show what happened in the past year. These reports are not looking forward.

Unlike financial accounting, managerial accounting is aimed at the internal uses of accounting information. These reports are issued only when needed, provide specific and detailed information about a particular department or programme, and are used by the library manager as a basis for making knowledgeable decisions. Library directors, department heads, and ohter supervisors represent this group (Hammer, 2001–2007; Smith, 2002). Communicating performance results inside the organisation provides, first and foremost, an opportunity to define the organisation's strategy, enhance the quality of the services provided, motivate the staff, and plan budgeting.

Smith (2002) says that, unlike financial accounting statements, managerial accounting reports are not required to follow any prescribed accounting formats. These reports can show financial information such as the shelved cost per book or non-financial information such as levels of user satisfaction with the collection. Managerial reports are used as they are needed. With managerial reports, the purpose is to help change of influence decisions occuring in the future. For example, managerial reports can 1) help to analyze variances from cost standards, 2) trace future cost flows, such as maintenance costs, to help equipment selection decisions, 3) aid in equipment purchasing versus leasing decisions, and 4) determine the break-even level of a service (Smith, 2002, p. 2-3).

The basic managerial accounting practices in the business world include: cost accounts for labour, material, and overhead; budgets for cash, income, and capital;

flexible budgets; forecasts; standard costs; variance analysis; transfer prices; and divisional performance measures. According to Buser (2007), some managing librarians already use many of these techniques, but they deserve wider attention. The best technique of the managerial accounting in the case of the university library could be the combination of the measurement of the library work with the library statistics and performance indicators and the results of the TDABC study.

Conclusions

For better management of public sector organisations, it is vital to cut costs and achieve efficiency and proficiency in both short and long term perspective. The potential to introduce better management practices certainly exists in almost every public sector organisation, including libraries.

Although libraries are not profitmaking organisations that earn a profit, there is still a need to find additional resources and cost-saving opportunities for their activities and services. Although not trained as accountants, library managers rely on accounting information for strategic planning and operational decision making. Increased demands for institutional accountability with university performance and costs under increased scrutiny, place library managers under increased pressure to maintain quality services while faced with decreased funding and tighter budgets. A commitment to greater efficiency requires an understanding of cost behaviour.

The overall trend to increase the effectiveness of the public sector supports the implementation of new cost accounting systems. Estonian university libraries' network certainly needs the introduction of cost accounting systems, as the lack of integrated and balanced managerial system of performance makes it impossible to effectively monitor how the goals are being reached, and to communication the relevant information to the interested parties outside the organisation, that is, to the donors – the state and the university. Both methods – the ABC and the TDABC – are suitable for university libraries, when library managers need to ask themselves what the services really cost. Since the university libraries usually belong to the central accounting system of the university, the exploitation of the ABC method would be more timeconsuming, laborious, and costly, and also assumes investment by university management. Because TDABC method does not measure how an employee uses its working hours, but how long it takes to complete one unit of an activity, this method is more suitable and therefore culturally acceptable for university libraries.

The authors of the present paper suggest that Estonian university libraries should initially implement the TDABC method as a department-based pilot project to detect the actual factors that would hinder the introduction of the method and the resources it would consume, to find optimal solutions to the problems that have

become evident, and only then implement the system in full scale in the organisation as an entirety. However, the involvement of experts in costing and economy is recommended.

Managerial accounting and financial records are based on cost accounting data. Therefore, libraries must first take into use cost accounting methods. In the libraries, where the cost accounting methods have been already implemented, it is easier to focus on the next step. Using the cost accounting methods (such as the ABC or somewhat simplified TDABC) it is easier to follow the distribution of expenses, the actual cost of the services, etc. Drawing on this data, further discussion can be developed with a view of managerial accounting in the context of library, which in turn provides more rational operation for an organisation and is beneficial for coping with financial crisis (which is predicted to last for libraries until 2015). The best method of managerial accounting for university libraries is to combine international library performance indicators with the results of TDABC.

Managerial accounting as well as new cost accounting techniques can be applied equally well to all types of libraries for internal reporting and operational budgets. With libraries becoming increasingly accountable to their parent institutions and to their constituents, the use of techniques becomes more important in order to monitor spending and control variances from planned costs. Accountability connotes better stewardship through the effective deployment of resources. New cost accounting techniques reinforce and enhance that stewardship.

Nevertheless, all this cannot be introduced in libraries until there is a lack of librarians with necessary skills. Thus, it is extremely vital that the LIS currucula would ensure that the future information professionals will acquire knowledge and skills for financial, cost and managerial accounting already in the institution of higher education.

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CONTINUING EDUCATION AND SELF-DEVELOPMENT OF EMPLOYEES IN ESTONIAN UNIVERSITY LIBRARIES

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Abstract

Purpose The aim of the current paper is to clarify if the staff of Estonian university libraries has enough opportunities and willingness for continuing education and to develop their skills and competencies related with their everyday work in formal as well as in informal form; whether they have sufficient skills for their current job and what kind of knowledge/skills do librarians miss the most and finally, whether their current income will allow them to continue their education.

Methodology The data used in this paper is based on reviewing of relevant literature to provide an overview of the concept of learning and development, and also on the results of the original survey, created by the paper's authors, held in Estonian university libraries governed by public law in Estonia. The analysis of the results are interpreted on the basis of the literature and authors' opinions, based on long-term working experience in Estonian academic libraries.

Findings Although the personnel of university libraries are highly motivated to train themselves, and some are even willing to do it at their own expense, most librarians are relatively pessimistic about their opportunities to develop themselves with their current salary. The increasing salary would be the biggest motivator for continuing education and self-development. There are a number of employees in university libraries who would be willing to participate in professional conferences and seminars, unfortunately, most of the them are not ready to deliver a presentation.

Originality/value The majority of the literature in library science has focused – and rightfully so – on the user: what do users and patrons want and/or need, how do they use it, how can librarians best provide it to them, do the users feel themselves comfortable in library building etc., etc. The best of the authors' knowledge, no research study has been in recent years, carried out in the Estonian university library context to determine continuing education and development.

Practical implications Based on the current study it can be said that the biggest challenge for managements of the university libraries in Estonia is to find the opportunities for financial and/or time support which could influence all kind of the development and learning activities of employees.

Keywords: university librarians, formal education, informal education, continuing professional education, self-development, institutional support

Introduction

Learning has become more and more important both in a personal and organizational context. The nature of work is turned to be more complex than ever before and due to this more people with ability to settle in and to develop are needed in an organization (Brooks, 2008). As knowledge has become the key factor for achieving efficient service and high productivity, organizations need people with high levels of knowledge, skills and abilities, which eventually lead to desirable organizational success. Beyond doubt, organizations are interested in continuing learning of the staff because of the improving skills and flexibility of the employee (Brooks, 2008, pp. 48-51). M. Armstrong in his *„Handbook of human resource management practice"* (2012) says that "Everyone in the organization should be encouraged and given the opportunity to learn – to develop their skills and knowledge to the maximum level of their capacity. Therefore, the organization needs to invest in learning, continuing education and development by providing appropriate learning opportunities and facilities" (Armstrong, 2012, p. 276), or by providing financial and/or time support (for example, paid leave) (Havener & Stolt, 1994).

There is a great deal of support for the notion that librarians have a deep commitment to professional development and continuing education. Previous studies have approached the topic of librarian learning and development activities from a variety of angles and most of them have looked for answers to a series of questions. Some studies have focused on specific types of libraries, with academic librarians being most heavily studied (Neal, 1980; Hegg, 1985; Havener & Stolt, 1995; Flately & Weber, 2004; Pan & Hovde, 2010). Some studies have analyzed among other things the continuing education needs of a specific group of librarians, for example the relationship between age and/or length of service as a professional librarian and participation in learning and development activities (Stone, 1970; Hegg, 1985; Long & Applegate, 2008). Some research to date has explored the motivations of librarians for participation in continuing education (Stone, 1970; Neal, 1980; Smith & Burgin, 1991; Chan & Auster, 2003). Recent studies have also shown that there is a great desire for technology-related continuing education (Hider, 2006; Long & Applegate, 2008; Leysen & Boydston, 2009). Many factors affect the level and kinds of learning and development activities librarians can undertake, and institutional

support, along with release time and financial assistance, has been mentioned to be one of the most important (Shelley & Nedria, 1990; Havener & Stolt, 1995; Chan & Auster, 2003; Long & Applegate, 2008; Pan & Hovde, 2010).

The existing literature, however, focuses more on training than on learning, more on formal education than on informal education, on what librarians actually do, to cope with the demands of their changed world of work (Varlejs, 1999, p. 173).

Organizational restructuring, transition from printed scientific information to digital information and new technological challenges have resulted in changing roles for librarians. Libraries are more and more becoming about supporting study and research, not storing books. Librarians need to become effective marketeers, they must think from the user's point of view, create services they need, and be effective in promoting them. Communications skills are key for a librarians - they have to communicate all the time - written and verbal. They have to be able to speak in public - there are talks and workshops and meeting which form the bulk of interaction with the departments. Librarians have to communicate new ideas successfully and get support for them. The knowledge and skills that librarians have acquired through formal education and on-the-job experience may no longer be relevant for jobs that have been redesigned for advanced knowledge and skills (Auster & Chan, 2003, pp. 57-58; Anyangwe, 2012).

The area of learning, continuing education and professional development is quite unexplored field in Estonian university libraries. Very few continuing education and training related surveys involving librarians have been carried out in Estonia, but specially in the area of public libraries (*i.e.* Samp, 2002).

In January 2012 a survey, using an online questionnaire method, was performed in Estonian university libraries governed by public law. These libraries were chosen because they are funded on a similar basis, they perform the same functions and their main aim is to support high quality education and to increase the state's potential for ongoing scientific discovery and development. University libraries are considered to be "legal persons in public law" (*i.e.*, a corporate entity with the standing of an individual) and are one of the autonomous, independently functioning scientific, educational, and cultural institutions that act on the basis of science and developmental activities stipulated in the statutes of their parent universities and other legislation. Because of the high demands provided for the university libraries, also the demands for university library employees are very high. Connected with the fact, that the initial questionnaire included 71 questions, together with questions about the respondents and some specifying questions, the authors of the survey decided to analyze only the B-part of the questionnaire for the purpose of the current paper. The aim of the current article is to ascertain the following indicators of librarians:

in which areas university librarians feel the need to update knowledge and/or improve skills in their current position;

relationship between the willingness toward continuing education and development and continuing education activities experience;

formal and informal activities for librarians' continuing education and self-development;

relationships between the participation of librarians in learning and development activities and individual characteristics (*e.g.*, length of service as a professional librarian, motivation, barriers to participation (like lack of knowledge about the learning activities, lack of finances)).

The first part of the article provides an overview about the constituents of learning, education and development as well as about the studies on the continuing education, learning and professional development in the library and information science (LIS) literature. The second part describes the research methodology and characterization of the respondents. The third part presents the analysis of the results of the study. The analysis of the results are interpreted on the basis of the relevant literature and authors' opinions, based on long-term working experience in Estonian academic libraries.

Literature Review

The Constituents of Learning and Development

Michael Armstrong says in his *Handbook of Human Resource Management* that: "Learning and development is defined as the process of ensuring that the organization has the knowledgeable, skilled and engaged workforce it needs. It involves facilitating the acquisition of knowledge and skills through experience by individuals and teams, learning events and programmes provided by the organization, guidance and coaching provided by line managers and others, and self-directed learning activities carried out by individuals" (Armstrong, 2012, p. 274).

J. G. Neal refers Elisabeth W. Stone's PhD dissertation from 1969. Stone views continuing education in librarianship as "all activities and efforts by librarians to upgrade their knowledge, abilities, competencies, and understanding in their field of work or specializations so that they can become more effective professionals and be able to handle responsibilities of greater scope and accountability." (Neal, 1980, p. 129).

Some authors are in the opinion that learning should be distinguished from training/education. According to Buckley & Caple (2007, p. 8), learning is the process by which a person constructs new knowledge, skills and capabilities, whereas train-

ing usually involves the acquisition of behaviours, facts, ideas, etc. that are more easily defined in a specific job context.

Learning and development activities can be characterized as formal, informal and on-the-job types of activities. Formal education involves careful planning, has set outcomes or learning objectives and the person is conscious of their learning experience (Steptoe-Warren, 2013, p. 129). Formal activities include courses and workshops offered in-house, by educational institutions, or by professional associations (Livingstone, 1999; Chan & Auster 2004). Formal activities are organized, structured programs that explicitly aim to foster understanding, knowledge and skills. Workshops offered by educational institutions are an example of formal activities (Livingstone, 1999; Auster & Chan, 2004).

Informal education occurs spontaneously and in many different places such as at work, at home and through interactions with other people. This takes place independently from trainer-led programmes, outside educational establishments and is not assessed (Steptoe-Warren, 2013, p. 130). Informal activities include attending conferences, discussions with colleagues, participating in e-mail discussion lists, reading the professional literature and pursuing self-directed projects. Informal activities also involve the pursuit of understanding, knowledge and skills, but outside the curricula of educational or academic institutions and professional associations. Informal learning occurs opportunistically and without strict timetables (Livingstone, 1999; Auster & Chan, 2004). Conference attendance can considered an informal activity because of the myriad opportunities to network and interact socially and professionally with a wide range of peers and colleagues.

On-the-job education involves the acquisition of skills while working on the job. It may involve following written and verbal instructions as well as observing others and then attempting the task. This form of education usually involves a supervisor or an experienced employee passing on their knowledge and skills to the trainee (Steptoe-Warren, 2013, p. 129). Although on-the-job education is mentioned here, the current article is focused to the formal and informal types of activities.

Motivation to Participate in Learning and Development Activities

People will learn more effectively if they are motivated to learn. Reynolds and Mason (Reynolds & Mason, 2002, p. 34) commented: "The disposition and commitment of the learner – their motivation to learn – is one of the most critical factors affecting learning effectiveness. Under the right conditions, a strong disposition to learn, enchased by solid experience and a positive attitude, can lead to exceptional performance". M. Armstrong highlihts goal theory and states that "motivation is higher when individuals aim to achieve specific goals, when these goals are accepted and, although difficult, are achievable, and when there is feedback on performance.

Learning goals may be set for individuals (but as effective motivators they must be acceptable) or individuals may set their own goals (self-directed learning)" (Armstrong, 2012, p. 280).

By W. Fisher and J. M. Matarazzo (1993) "The importance of continuing education is a necessary component of professional life. Given the brevity of the explosive nature of the technological and international changes taking place in libraries, continuing education is without doubt necessary. Continuing education is important in every profession and it is absolutely essential in a professional environment where rapid change alters the scope, knowledge base, and methodologies of that profession (Fisher & Matarazzo, 1993, pp. 290-291).

By Long & Applegate (2008) "Continuing education, learning and professional development in librarianship is a ubiquitous topic but it can be characterized as fragmentary and contradictory. As professionals whose job is to assist users with their knowledge needs, librarians recognize the necessity of remaining lifelong learners in order to keep pace with the ever-expanding amount of available information. The area of professional practice experiencing the most rapid change over the last decade and a half has been information technology, especially the Web and its many applications" (Long & Applegate, 2008, p. 172). Librarians must not only know how to use these emerging technologies in their jobs, they also must be able to instruct the library users how to operate these systems.

As the library's most valuable asset, the staff must be encouraged to upgrade their educational and professional qualifications. Efforts must also be made to sharpen their skills regularly with the attendance of academic conferences, seminars and workshops within and outside the library and information science (LIS) area. The more the library staff benefit from continuing education and training, the more they would become skilful, confident and above all interested in the library work itself. Their future prospects for promotion and advancement would be enhanced too (Senyah, 2003, pp. 85-88). Changing technology is typically cited as a reason for greater investment in staff development (Woodsworth, 1998, p. 62). No matter how automated an organization or a library may be, high productivity depends on the level of motivation and the effectiveness of the workforce.

Supporting staff training and education is an indispensable strategy for motivating workers. This will give the librarian or information professional opportunities for self-improvement and development to meet the challenges and requirements of new equipment and new techniques of performing a task (Tella *et al.*, 2007, p. 4). The literature on competence suggests that motivation to update is the most salient determinant of participation in learning and development activities. In Stone study (1970) it was found that the greatest motivations for engaging in professional development activities were concerned with the nature of the content of the devel-

opment opportunity or its relation to the work process (Stone, 1970, p. 67). The studies that have examined the link between perceived benefits of training and participation have found that intrinsic benefits of training (*e.g.*, personal satisfaction) and extrinsic benefits of training (*e.g.*, better pay) were significant predictors of participation (Chan & Auster, 2004, p. 268).

Academic Librarians and Participation in Learning and Development Activities

Academic librarians, of course, are required to obtain the highest possible level of achievement in their field. This is certainly the case with librarianship in general and with academic librarianship in particular.

With the increasing variety of formats in which information is available, the expanding dependence on technology, the changing nature and internationalization of university library clientele, and the demand for library managers with the skills to cope with the growing size and complexities of libraries and library networks, the profession has begun to assume a greater responsibility for the provision of continuing education possibilities for its members (Neal, 1980, p. 128). Both formal as well as informal continuing education and development activities are very important for academic librarians.

The purpose of participating in professional development of academic librarians is twofold. On the one hand, it's a necessary part of working in the academic environment. As academic professionals university librarians are often expected to participate in the same process as teaching faculty do. This may include lecture in information literacy, teaching information seeking in some specific field, but also promotion through the academic ranks and tenure. On the other hand, professional development has also been shown as being instrumental in the retention of librarians especially of underrepresented librarians (Flately & Weber, 2004, p. 492).

In library and information science curricula, it is possible to pass applied higher education studies, bachelor's studies, master's studies, and doctoral studies. By Flately & Weber (2004, p. 488), "In the fast paced world of academic librarianship, it seems almost impossible to keep up with the change. Yet this has become both a mandate and an expectation – that the information professional have expert knowledge of new information products, procedures, and services".

In addition to the demands to have expert knowledge of new information products, procedures and services, the new academic librarian is expected to develop competencies as their careers grow, e.g., change management, leadership development, project management, problem solving, decision making, and time management. Also, the university library professional is expected to become involved with professional development activities. It involves participation in professional

organizations, making a presentation in conferences, publishing articles and other professional development activities outside working hours. This is especially aimed at young specialists, who have just come to work in the library and who would otherwise have a hard time finding appropriate skill implementation and development opportunities.

Therefore, it can be said that in the process of the continuing education, the informal activities are just as important or even more important for university librarians as the formal activities. The study about the continuing education attitudes and experience of academic librarians, conducted among the librarians of the City University of New York, clearly demonstrated that librarians favor the interaction (meeting with other librarians at conferences and association activities) and self-study modes over formal course work (Neal, 1980, p. 130).

Length of Professional Library Experience and Participation in Learning and Development Activities

Based on human capital theory, age is expected to affect an individual's motivation to update and an organization's willingness to train the individual. When the level of involvment in continuing education was examined by age in study, concluded among academic librarians in United States 1982, the most heavily involved were the youngest (47%). Only 14% over the age of 60 participated in continuing education activities. The longer librarians were served in their library career in total, the less likely they were to have engaged in continuing education. Conversely, those newest to the profession reported the most participation (Hegg, 1985, p. 49). Older workers (45 years and older) are considered at risk for obsolescence, yet older workers are less likely to receive employer-sponsored training. Older workers are seen as resistant to change, less interested in challenging jobs, and as a poor investment for training. Older individuals who are nearing retirement might be expected to be less willing to participate in updating (Chan & Auster, 2004, p. 268).

On the other hand, empirical research has shown that, for all classes of workers, including librarians, age did not always act as a deterrent to participation in updating activities. Furthermore, longer tenure in an organization was related to greater participation in updating activities. In contrast, longer tenure is related to reduced participation in informal training (Chan & Auster, 2004, p. 268). Results of the study among the librarians of the City University of New York showed the positive relationship between continuing education activities and experiences. It is not clear whether affirmation breeds involvement, or vice versa. Nevertheless, those librarians who recognized the need for such participation and viewed it positively also tended to be more actively involved. The middle-age (age group of 40 to 49 years) and mid-career librarian (11-20 years since library degree) maintained a more posi-

tive attitude toward continuing education activities and was more extensively involved than other groups. Clearly, years of experience and time since completion of library degree are important factors in producing recognition of the need to update knowledge and improve skills (Neal, 1980, pp. 130-132).

Institutional Support and Participation in Learning and Development Activities

Managerial support is a significant factor in the participation of employees in training and development activities. Institutional support is the perception that managers and supervisors in the organization actively support employees in their updating efforts. Managers and supervisors must act as gatekeepers to training and development opportunities (Chan & Auster, 2004, p. 270).

Administrative support is an obvious and essential element in the professional development process (Pan & Hovde, 2010). Most articles on institutional support for professional development seem to be written with an underlying assumption that support does, indeed, have a positive influence upon professional development. However, practical concerns, particularly the inability to budget sufficient funds and time, frequently make involvement difficult (Neal, 1980, p. 132).

Academic libraries in United States provide great institutional support for professional development activities in the belief that such support fosters the continuing professional growth of their staff members (Havener & Stolt, 1994, p. 25). Although there are many potential types of institutional support, like secretarial support, computer support, positive performance appraisals, and mentoring programs, then time and money are the most commonly mentioned means of institutional support (Havener & Stolt, 1994, p. 27). Institutional support is strongly correlated with librarians' activity level concerning the continuing education and development, while lack of time was indicated as the primary deterrent, followed by prohibitive costs. Stone (1969) concluded that the major deterrents were those factors "associated with extrinsic conditions," while Martin (1974) found that insufficient time and money were the major frustrations (Neal, 1980, p. 131). Also, the survey conducted among 185 librarians in Oklahoma, USA, in 1991 (Havener & Stolt, 1994) showed that the time (paid leave) and the financial support that is granted by an employer or a library for the self-development activities of an employee, is crucial for the employee's preparedness for in-service trainings. The results showed that the library's support influences the most the participation in professional seminars, conferences, workshops, and meetings – those librarians who received support, participated in these events at a level of almost one hundred per cent. The library's support was also a very important motivational factor for librarians' formal education and for those librarians who were interested in research. In 2002, Anne Samp studied the needs and opportunities of in-service training of information specialists and librarians in

Estonia. The primary reasons for not taking any postgraduate courses are lack of finances and intensive working hours e.g. lack of time (Samp, 2002).

Professional librarians need to continue their education throughout their career as contexts change. Many of the principles learnt at library school may still be relevant thirty years down the line, but some of them would likely require revision, or at least reinterpretation. Nevertheless, librarians cannot expect the employer to cover all the education as opposed to the training (Hider, 2006, p. 37). Both the individual and the institution share responsibility for continuing professional development (Havener & Stolt, 1994, p. 35).

Research Methodology and Data Collection

This study was conducted in a quantitative manner. A quantitative approach was used to gather data by distribution of questionnaire to the sample. Also several open questions were used to gather the information that would justify the answers to certain questions. For compiling the questionnaire, the authors analyzed several previous studies and also questionnaire appendixis of these studies. (Kuvaas, 2006; Gabris & Mitchell, 1988; Harris, 1988; Schneider *et al.*, 2003; Snape *et al.*, 1998; Murray, 1999; Leckie & Brett, 1997). The questionnaire was divided into four section: A) Job satisfaction: general issues; B) Learning and individual development; C) Division of labor and coordination; D) Performance measurement and appraisal. Connected with the fact, that the initial questionnaire included 71 questions, together with questions about the respondents and some specifying questions, the authors of the survey decided to analyze only the questions, concerning the career for the purpose of the current paper. To identify librarians attitudes, five-point and three-point interval scale (so called Likert-scale), discrete numerical five-point scale and multioption scale were used in this questionnaire. An online survey was used to gather data once at the same point of time for each participating library. The samples were the librarians working in the selected university libraries.

The population of the current study is all professional staff and qualified specialist staff (see also ISO 2789:2006. Information and documentation. International library statistics, Estonian language version in 2007, clause 3.6.3 – 3.6.6). The questionnaires were applied to 195 library staff working in selected university libraries. 111 completed questionnaires were received back. The rate of receiving back was 57%. Data obtained from the completed questionnaires was analyzed using simple percentages, tables, bar charts and pie-charts.

8 men and 103 women responded to the questionnaire. That kind of generic divide characterizes Estonian library staff as a whole – first of all due to the low salary, librarianship has developed into the field of work predominantly for women.

The major part of respondents receive monthly income less than 500 € (52 respondents, that is, 47% of respondents) or their income remains between 500 € and 700 € (47 respondents, 42%). 10 respondents (9%) receive monthly from 700 € to 900 € and only 2 respondents receive monthly income over 900 €.

The most active respondents belonged to the age groups of 41 to 50 years (29 persons, 26%) and 51 to 60 years (26 persons, 24%), followed by the respondents from the age groups of 31 to 40 years (20 persons, 18%), 61 to 70 years (19 persons, 17%), and 21 to 30 years (16 persons, 14%). Only one respondent fell into the age group of 71 to 81 years, that makes 1% of the respondents.

The length of professional employment varied a lot. 16% of respondents had been professionally employed less than 5 years, 6% of respondents – for 5 to 9 years, 32% of respondents – for 10 to 19 years, 23% of respondents – for 20 to 29 years, 18% of respondents – for 30 to 39 years, and 5% of the respondents – for 40 to 49 years.

By professional status, 73% of respondents were specialists, 12% middle managers and 15% chief specialists.

Results

University librarians, of course, are required to obtain the highest possible level of achievement in their field. It is possible to pass applied higher education studies, bachelor's studies, master's studies, and doctoral studies. Secondary or vocational secondary education have 25% of the respondents, 4% of the them reported to have vocational higher education in the field, 49% have acquired academic degree or professional higher education in the field and 10% in other area. By Flately & Weber (2004, p. 490) one important factor to consider is the need for additional advanced degrees. Eventhough it is not a requirement of employment, many academic libraries expect librarians to complete an additional advanced degree. This could include

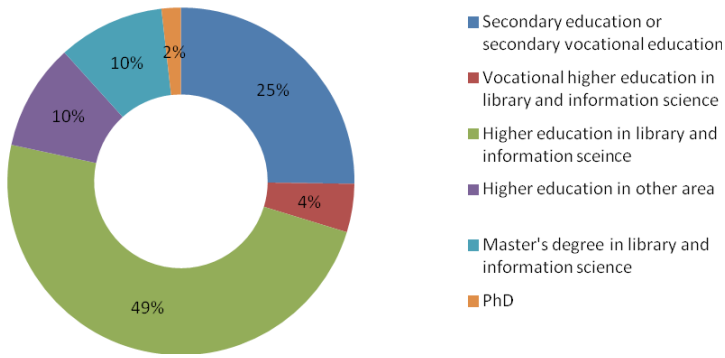

Figure 1. Distribution of the survey respondents on the basis of education

a second master's degree or a doctoral degree. It's important to consider a degree that complements the work that employee is doing. 10% of the respondents reported to have a M.A. degree in library and information science and 2% to have doctoral degree.

In Figure 2, we can see that the surveyed librarians and specialists have a high self-esteem: 77% consider that they have sufficient knowledge and skills for their current position, only 15% are hesitant and 8% believe that they lack sufficient knowledge and skills.

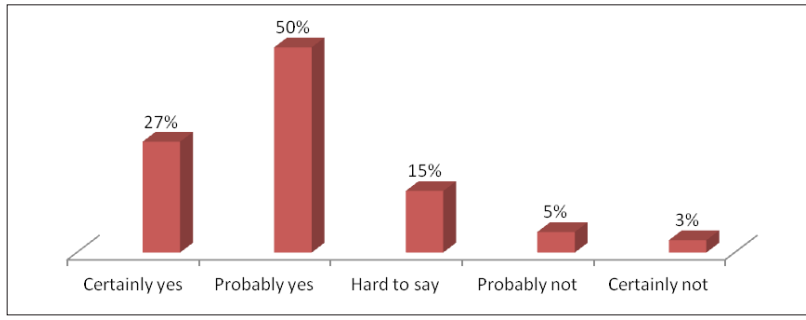

Figure 2. Librarians opinions about their sufficient knowledge and skills for their current position

As shown in Figure 3, the highest level of respondents who value their knowledge and skills as sufficient we can find from the groups of 40 to 49 years and 20 to 29 years of service in the field of librarianship (respectively altogether 100% and 88% have answered either "Certainly yes" or "Probably yes"). Also the respondents with the less than 5 years library experience value their knowledge and skills as sufficient. For a new librarian, formal classroom instruction covers primarily generalized knowledge about the library work as a whole, fundamental concepts and theories of library systems and operations. New hires, fresh from school with a recent curriculum, have also a relatively high self-esteem. After a few years of library work experience, the employee seems to be realize that the knowledge and skills she/he got from occupational training, are not sufficient. Therefore, it is not very surprising that more sceptic ones about their sufficient knowledge and skills we can find among the respondents from the group of 5 to 9 years of professional employment.

Although more than three-quarters of the respondents (77%) feel that they have sufficient knowledge and skills for their current job, they would be still willing to learn something if this would result in increasing their salary (90%).

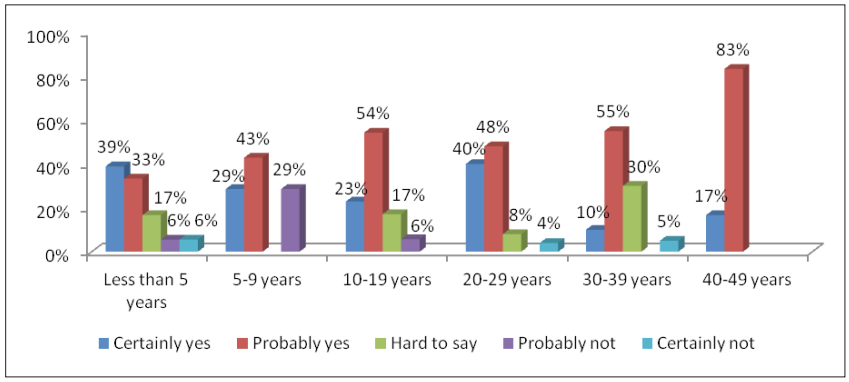

Figure 3. Answers to the question: "Do you feel that you have sufficient knowledge and skills for the current position?" according to the years of professional library experience (% of the group)

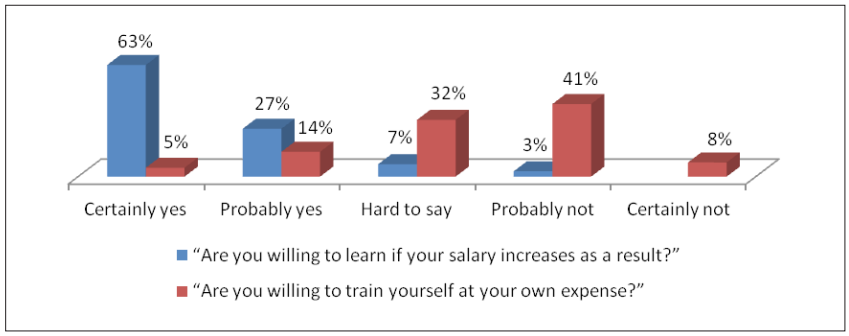

Figure 4. The impact of income and increasing salary to the willingness to learn

Taking into account that the vast majority of employees of the Estonian university libraries receive a monthly salary of less than 500€, it is understandable why 49% of those surveyed are not willing to educate themselves at their own expense.

Looking at respondents' willingness to study in sections of lenght of service in librarianship, almost every group is willing to learn, if it would result in increasing salary. Figure 5 shows that the ambition to learn raises up to the highest level among respondents with working experience of 5 to 9 years – 100% of them wish to learn in the hope of better salary. This group also included the most of the sceptic ones about their sufficient knowledge and skills for their current position (see Figure 3). Only groups of 10 to 19 years, 20 to 29 years and 30 to 39 years of service contain small percentage of those, who are not enthusiastic about improving themselves for a potential rise in a salary in the future (respectively 3%, 4% and 5%).

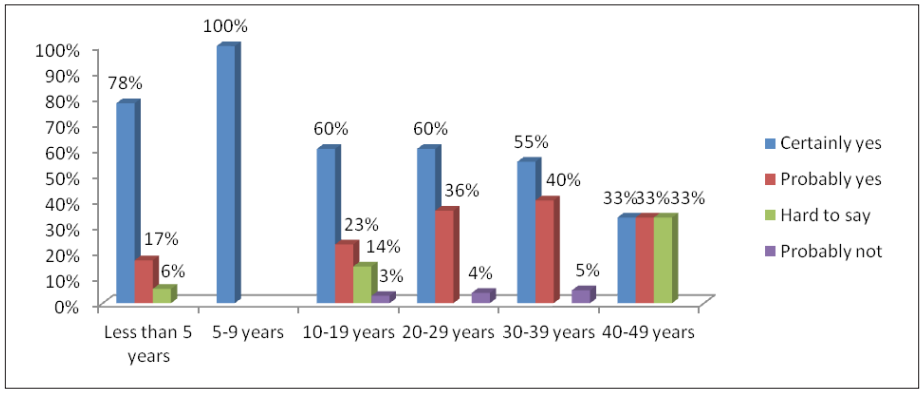

Figure 5. The respondents' willingness to learn if the salary increases as a result according to the years of professional library experience (% of the group)

Although librarians generally are self-motivated in their professional development, organizational support is a key factor in creating a culture to encourage participation in learning and development activities.

An organization-based support for librarians' professional training and development is also essential in Estonia and it is certainly one aspect that requires in-depth investigation in the future. Also, clause 28 (2) 5) of the Estonian Employment Contracts Act (RT I 2009, 5, 35) gives an opportunity to cover part of the costs by stating that it is for the purposes of development of the professional knowledge and skills of an employee, to provide the employee with training based on the interests of the employer's enterprise. Clause 15 (2) 5) of the Estonian Employment Contracts Act, in turn, provides an employee with the following liability: to participate in training for improvement of vocational knowledge and skills. The above provisions are intended, among other things, to contribute to the awareness of the mutual training obligations and the valuation of the principle of lifelong learning. Since 2011, the employer can cover the costs of formal education acquired within the adult education system of an employee under certain conditions. Investing in the formal education acquired within the adult education system (e.g. master's studies or doctoral studies) that is related to an employee's job duties is justified if an employer has the right to expect the employee's contribution to the organization later on. How many libraries have used this opportunity to cover the employer's education costs, is unfortunately unknown.

A total of 54 people responded to the following open question: "What kind of knowledge/skills do you miss the most in your current position?" The respondents mostly encountered difficulties with foreign languages. The answers to the open question in Table 1 show that 25 people feel the need for learning and improving

language skills; mostly in English, Finnish and Russian; with Chinese and Japanese also mentioned. Secondly, lack of IT-related knowledge was mentioned (14 respondents). This includes both general computer skills and the need for specific technical knowledge. By M. Nofsinger (1999), technological skills are necessary for librarians. The information environment in libraries include an integrated library system to manage the OPAC, circulation, acquisitions, and cataloguing functions of the library; electronic information services; CD-ROMs; public access computers providing access to the Internet and to office software suites; local area networks (Wifi); imaging systems; and devices for visually handicapped users. Librarians should be able to use all these systems well enough to show the library users how to operate them.

Table 1. Formal activities, preferred by the respondents

Training form	% of respondents
In-service training	33%
In-service training, Training trip*	35%
Formal studies, Vocational courses, In-service training, Training trip	9%
Training trip	9%
Formal studies, In-service training, Training trip	4%
Formal studies, Vocational courses, In-service training	2%
Formal studies, Training trip	2%
Vocational courses	1%
Vocational courses, In-service training, Training trip	1%
Formal studies, Vocational courses, Training trip	1%
Formal studies, Vocational courses, In-service training, Training trip	1%
Did not respond	2%
Total	100%

**For example, going to a foreign library to examine one´s field in depth*

Yet there appears to be a lack of managerial knowledge, conflict management skills (in this regard, particularly for readers), knowledge of history, binding and legislation.

What forms of training would staff of Estonian university libraries be willing to undergo? Answer choices were given as following: formal studies, vocational studies, in-service training and training trip (for example, going to a foreign library to exam-

ine one's field in depth). It was possible to select multiple answers and that option was used. Therefore, the most popular individual choice turned out to be in-service training, which was preferred by 33% of the respondents as a potential training form, and training trip, which was preferred by 9% of the respondents. Vocational training as a single option was preferred only by 1% of the respondents. In contrast, among those who selected several alternatives, the most popular combination was in-service training and training trip (35%), and the combination of formal studies, vocational studies, in-service training and training trip or a combination of all the options – 9%. The remaining combinations were less preferred.

The other forms of mentioned trainings included e-learning, training/gaining experience from other Estonian libraries, a variety of foreign language courses (four times), and computer training. It was also mentioned that the salary is too low to attend trainings at one's own expense.

One of the most important components of a career are competence and good education, which requires continual acquisition and development of knowledge, skills and experience, also participation in specialty societies, professional conferences, and seminars. If the everyday work does not allow employees to implement their skills enough, they have the opportunity to seek challenges elsewhere. For instance, they can write presentations, take on a specialized topic in various conferences, seminars, and forums; in other words, they can be active outside of working hours. Although librarians often attend conferences primarily for professional rejuvenation and social networking, conferences are also perceived as valuable for learning purposes. If an employee is actively involved in professional activities outside of working hours, it is also beneficial for an employer (Türk, 2005, pp. 362-364). After all, all public university libraries in Estonia are simultaneously research libraries, which are required, in addition to other annual reports, to submit a research report each year.

As we can see from Figure 6, there are a number of employees in university libraries who would be willing to participate in professional conferences and seminars with the goal of self-improvement – as much as 84%. But only 32% are ready to deliver a presentation, 20% are hesitant and, unfortunately, 48% of respondents do not want to perform at all.

It is clear that the idea of public speaking in the presence of a large audience can be daunting, if it has not been done before. However, if an employee is interested in any professional topics, it can be assumed that the subject may be interesting to other librarians, and moreover, to the general public.

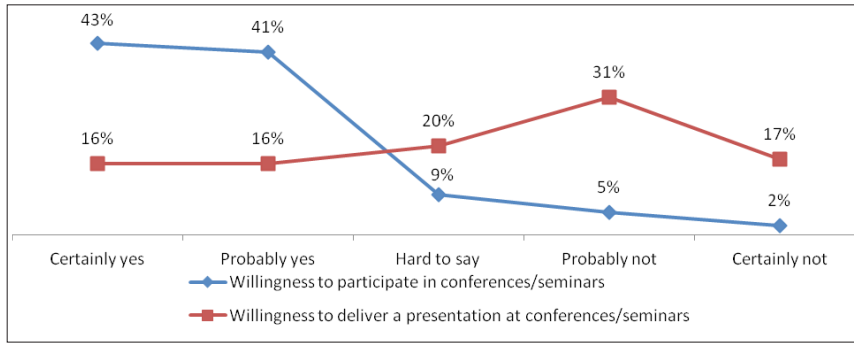

Figure 6. Librarians willingness to participate and perform in professional conferences

Figure 7 shows that the information about trainings and conferences/seminars has been sufficiently available: none of the participants in the survey did respond to these questions as "No, definitely not".

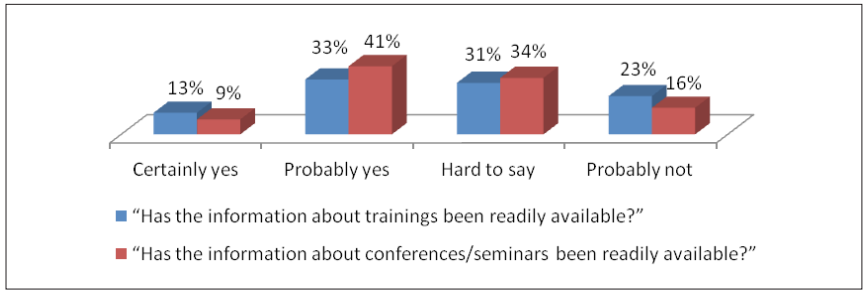

Figure 7. Avalability of the information about trainings and conferences/seminars

Nevertheless, it is still surprising that 61% of the respondents have not participated in any training during the last 12 months (see Figure 8). Perhaps the university library personnel are not informed enough about the opportunities to take training trips, for example, to get acquainted with their professional field in some other country's library, offered by the Archimedes Foundation via the Erasmus-program meant for university staff. Erasmus is a higher education sub-programme under the European Lifelong Learning Programme. The non-academic staff of universities may participate in trainings as well as in conferences under the Erasmus Programme. Time spent in training can last for 1 to 6 weeks. The programme lasts until the end of 2015.

By Auster & Chan (2004, pp. 57-58) "Librarians nearing retirement may be reluctant to invest time and money in professional development they will hardly use,

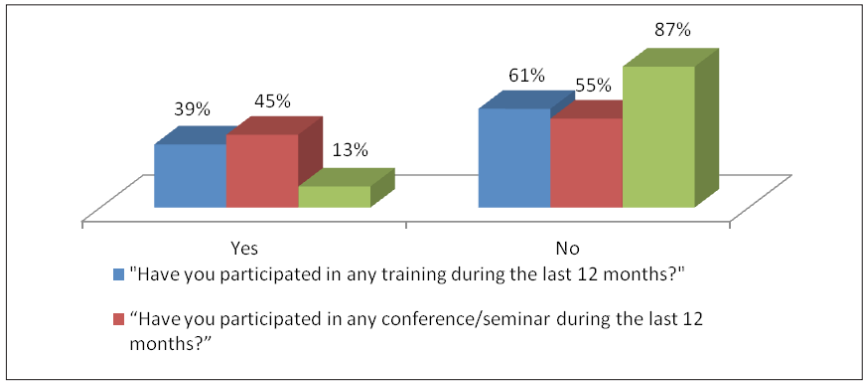

Figure 8. Librarians actual participation in trainings and seminars

and libraries may be reluctant to invest in training librarians who will soon retire". Fortunately, it is not the case in Estonian university libraries. Librarians with professional library experience of 40 to 49 years and 30 to39 years are even more active participating trainings than their younger colleagues with library experience of 20 to 29 years (see Figure 9). As librarians with professional employment of 5 to 9 years willingness to learn was up to 100%, it is seen that they are not only willing to participate in courses, but they also do that – 57% out of this group participated in some training during the last 12 months.

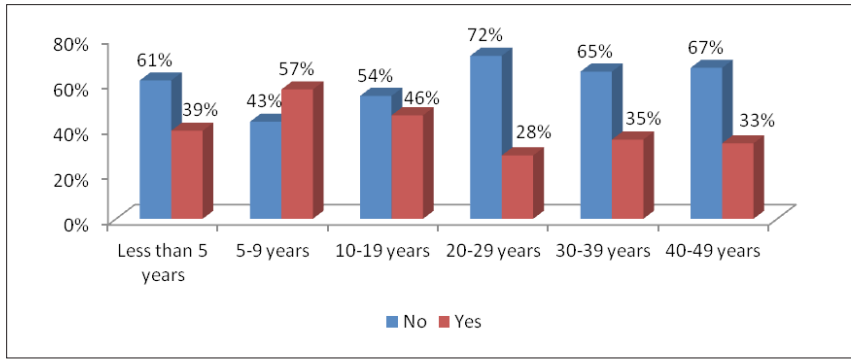

Figure 9. Distribution of the survey respondents participating in training according to the years of professional library experience (% of the group)

A total of 55% of the respondents have not participated in any conference/seminar during the last 12 months (see figure 8). However, the latter is understandable since the attendance at conferences is usually supported by various funds in case the at-

tendee is ready to make a presentation there. As only 13% speak at a conference, it will not yield a very high percentage of conference participants.

Conclusions

Although librarians generally are motivated in their professional development, and some of them are even willing to do it at their own expense, the bigger motivator is hope for increasing salary. Most of the respondents are willing to participate in an in-service training; also training trips are quite acceptable for many. Nearly a quarter of respondents are ready for formal studies. Most people are interested in learning languages.

It is very important for academic librarians to keep abreast of the profession as it changes so rapidly. One of the best ways to do this is by attending professional workshops, lectures, seminars, also by participating in specialty societies, professional conferences, and seminars. Most of the respondents are willing to participate in conferences and seminars with a purpose of self-improvement, and most of them have done it within the last 12 months. Another important professional development activity is giving presentations, to colleagues, and community groups. It is very useful for librarians to share their experiences about the topic that is interesting for presenter, or about the project he/she has completed at work. Librarians should not underestimate themselves; there are an incredible variety of conferences, meetings, symposiums, etc. going on all the time. A total of 35% of respondents would be willing to give presentations, unfortunately only 18% of them have performed one within the last 12 months.

Although the administrative support may include a variety of approaches, like take care that there is no lack of knowledge about the learning and development activities, the main issue for Estonian university librarians is the salary at the moment. On the basis of the reality that the major part of respondents receive monthly income less than 500 €, today the first and most critical issue for libraries is to increase employees' salary and by that improve their economic status. The authors of the survey are of the opinion that employers should support the employees' training and participation in seminars and conferences and provide greater encouragement for active participation, in other words performing and sharing experiences. The library's financial and/or time support could influence the self-development activities of an employee, the participation in professional seminars, conferences, workshops, and meetings. Additional benefits include the facts that the employees' participation in continuing education will contribute to the advancement of the profession: for example, librarians will get to know better colleagues around the country and abroad. This in turn makes the employees' a better librarians and everyone benefits including students, faculty members, administrators, and colleagues.

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TTÜ RAAMATUKOGU LUGEJATE RAHULOLU UURING 2012

Aiki Tibar

TTÜ Raamatukogu teadus- ja arendustalituse juhataja

Sissejuhatus

TTÜ Raamatukogu uus hoone ülikoolilinnakus avati lugejaile 2009. aasta septembris. Hoone avamisele eelnes aastatepikkune ettevalmistustöö: kõigepealt raamatukogutöötajate põhjalik töö raamatukogu pinnavajaduse väljaselgitamisel, kogude paigutuse ja teenuste kavandamisel; seejärel hoone projekteerimine, ehitamine ja sisustamine.

TTÜ Raamatukogu neljal korrusel on 500 lugejakohta, sh 100 arvutitöökohta, 26 individuaaltööruumi ja kuus 8-kohalist arvutiga varustatud rühmatööruumi. 21-kohaline arvutiklass on avatud kõigile lugejaile e-ressursside kasutamiseks. 16 infokioskit sisaldavad e-kataloogi ESTER, artiklite andmebaasi ISE, avakogu juhti ning individuaal- ja rühmatööruumide reserveerimise süsteemi. Raamatukogus on mitu iseteeninduslikku seadet: kaks laenutusautomaati, tagastusautomaat, kolm printerit/ koopiamasinat ja neli skaneerimistöökohta. WiFi leviala võimaldab kasutada sülearvutiga internetti igal pool raamatukogus. Raamatukogu veebi kaudu on kättesaadavad e-kataloog, e-teavikud, info teenuste ja infoallikate kohta, juhised vajaliku info leidmiseks jpm.

Kuidas lugejad end selles keskkonnas tunnevad, kuidas nad hindavad uue raamatukogu võimalusi? 2012. aasta lõpul viiski raamatukogu läbi uuringu, mille eesmärgiks oli välja selgitada lugejate rahulolu raamatukogu teenuste, töötingimuste ja keskkonnaga. Uuringu tulemusi ja lugejate ettepanekuid on raamatukogu kasutanud teenuste ja keskkonna arendamisel.

Eelmise lugejate rahulolu-uuringu korraldas TTÜ Raamatukogu 2006. aastal (Valner, 2009), mil raamatukogu ei saanud pakkuda mitmeid lugejate ootustele vastavaid teenuseid ja töötingimusi. Brindley (2006) rõhutab, et raamatukogu peab oma kasutajaid tundma ning rohkem investeerima innovatsiooni ja digitaalsetesse lahendustesse. Brindley küsib, kas raamatukogu kui koht on lugejatele oluline ja kas raamatukogu atmosfäär võib lisada väärtust ka pakutavale informatsioonile?

Taust: raamatukogu kui koht ja ruum

Ülikooliraamatukogu sagedasteks külastajateks on üliõpilased, kelle õpingute toetamisel on lisaks infoallikate kättesaadavaks tegemisele väga oluline kaasaegne raamatukogu keskkond ja ruum. Beard ja Dale (2010) tõdevad, et üliõpilased kasutavad õppimiseks endiselt trükiraamatuid, mida raamatukogus hoiustatakse, otsitakse, laenutatakse ja tagastatakse. Seega pakuvad raamatukogud vaikset kohta õppimiseks koos trükimaterjalide ja tehnoloogiliste vahenditega, aga ka rühmatööks sobivate võimalustega.

Raamatukogu teenuse kvaliteedi hindamisel on küsitud lugejate hinnanguid ka raamatukogu ruumi sobivuse kohta vajalikeks tegevusteks. Näiteks, Oulu Ülikooli raamatukogu teenuse kvaliteedi küsimustikus (Kytomäki, 2009) paluti lugejatel hinnata raamatukogu kui kohta kolmest aspektist: süvenemiseks ja loometööks sobiv koht, mugav ja ligitõmbav asukoht ning koht, kus on võimalik vaikuses õppida. Küsitluse tulemused näitasid, et raamatukogu peaks olema suuteline pakkuma lugejaile enam võimalusi rahulikuks õppetööks.

McNamara (2012) tutvustab Austraalia ülikooliraamatukogude muudatusi ruumide ümberkujundamisel, arvestades üliõpilaste erinevaid õppimisstiile, tehnoloogia kasutamist, omavahelist suhtlust ja eelistusi õppimiskoha valimisel. Üliõpilased vajavad lihtsat juurdepääsu raamatukogu teenustele, sealhulgas digitaalsele infole ja trükikogudele, arvuti kasutamise võimalust, sülearvutiga töötamise kohta ja head WiFi-t, sobivat ala rühmatööks ja individuaalseks õppimiseks, abi kättesaadavust. Meeldivat õhkkonda raamatukogus aitavad luua sobiv värvikasutus ja vaated ümbritsevale.

Tampere Ülikooli raamatukogu teenuse kvaliteedi uuringutes (Lehto jt, 2012) küsiti lugejatelt hinnanguid ka ruumide olulisuse kohta ja rahulolu ruumidega. Lisaks viidi läbi vaatlus, et välja selgitada lugejate tegevused raamatukogus (lugeja- ja arvutitöökohtade, printeri/koopiamasina, laenutus- ja tagastusautomaadi kasutamine, suhtlemine raamatukogutöötajaga jne). Uuringute tulemused näitasid, et hoolimata elektrooniliste kogude kiirest kasvust ja nendele kaugligipääsu võimalusest kasutatakse endiselt aktiivselt raamatukogu füüsilist ruumi. 2010. aasta uuringu tulemuste põhjal on raamatukogu külastamisel tavapärasemateks tegevusteks raamatute laenamine ja tagastamine ning üksinda õppimine. Kõige tähtsamaks aspektiks raamatukogu ruumide kvaliteedi hindamisel peavad lugejad jätkuvalt vaikust (uuringute tulemused aastatel 2002, 2005, 2008, 2010).

Loughborough Ülikooli raamatukogu ruumi kasutamise kohta on tehtud uuringuid, fotosid ja ka video (Matthews ja Walton, 2014). Raamatukogu füüsilise ruumi arendamise strateegia koostati kooskõlas ülikooli üldisema strateegiaga õpetamise ja õppimise kohtadest kampuses. Raamatukogu ruumi tugevused, nõrkused, võimalused ja ohud selgitati välja SWOT analüüsiga.

TTÜ Raamatukogu uuringu läbiviimine ja küsimustikule vastamine

Andmeid kogusime ankeetküsitluse teel (vt lisa). Küsitluse eel palusime küsimustiku täita kolmel TTÜ bakalaureuseõppe ja ühel magistriõppe üliõpilasel. Nende tagasiside võimaldas muuta selgemaks küsimuste sõnastust ning täpsustada küsimustiku täitmiseks kuluvat aega.

Küsitluse viisime läbi 19. novembrist 16. detsembrini 2012. Küsimustik oli kättesaadav raamatukogu veebis ja paberkandjal raamatukogus, vastamine oli anonüümne. Veebipõhise küsimustiku koostamisel kasutasime Google Docs tarkvara. Küsimustik sisaldas 13 küsimust, lisaks andmed vastaja kohta. Enamik küsimusi oli valikvastustega, mitme küsimuse juures palusime lugejaid oma vastuseid kommenteerida ja teha ettepanekuid. Küsimustega raamatukogu kasutamise kohta soovisime teada vastajate lugejastaaži raamatukogus; raamatukogu, sh veebi külastamise sagedust ja eesmärki; milliseid raamatukogu infoallikaid kasutatakse; arvutite piisavust ja nende kasutamise eesmärki; raamatukogu sobivust vaba aja veetmiseks ning millist kohta raamatukogus eelistatakse õppimiseks või ajaveetmiseks. Lugejate rahulolu väljaselgitamiseks palusime hinnata raamatukogu teenuseid ning töötingimuste ja keskkonna eri aspekte.

Küsimustikule vastas 291 lugejat, neist 87 (29,9%) täitis ankeedi paberil. Vastanutest 60,9% olid TTÜ bakalaureuse- ja inseneriõppe üliõpilased, 19,6% magistrandid, 2,7% doktorandid, 6,2% õppejõud, teadurid ja teenistujad ning 10,3% lugejad väljastpoolt TTÜ-d (tabel 1).

Tabel 1. Vastanute jagunemine lugejagruppide järgi

	Arv	%
TTÜ üliõpilased	**243**	**83,5**
sh bakalaureuseõppe	146	50,2
sh magistriõppe	57	19,6
sh inseneriõppe	31	10,7
sh doktoriõppe	8	2,7
sh rakenduskõrgharidusõppe	1	0,3
TTÜ töötajad	**18**	**6,2**
sh õppejõud ja teadurid	7	2,4
sh teenistujad	11	3,8
Lugejad väljastpoolt TTÜ-d	**30**	**10,3**
Kokku	**291**	**100**

TTÜ teaduskondade järgi oli vastanuid enam majandus- (19,9%), ehitus- (15,1%), infotehnoloogia (14,4%) ja matemaatika-loodusteaduskonnast (13,4%) (tabel 2). Uuringus osalenud lugejad väljastpoolt TTÜ-d olid üliõpilased ja töötajad mitmetest kõrgkoolidest ja asutustest, näiteks Tallinna Ülikool, Tartu Ülikool, IT Kolledž, Tallinna Tervishoiu Kõrgkool jt.

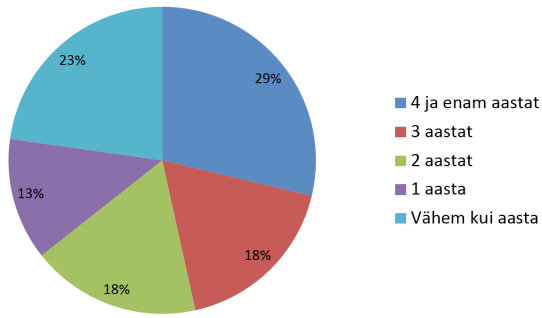
Tabel 2. Vastanute jagunemine teaduskondade ja muu üksuse järgi

	Arv	%
TTÜ majandusteaduskond	58	19,9
TTÜ ehitusteaduskond	44	15,1
TTÜ infotehnoloogia teaduskond	42	14,4
TTÜ matemaatika-loodusteaduskond	39	13,4
TTÜ keemia- ja materjalitehnoloogia teaduskond	20	6,9
TTÜ energeetikateaduskond	19	6,5
TTÜ sotsiaalteaduskond	16	5,5
TTÜ mehaanikateaduskond	15	5,2
Muu TTÜ allüksus, kool või asutus	38	13,1
Kokku	**291**	**100**

TTÜ Raamatukogu kasutamine

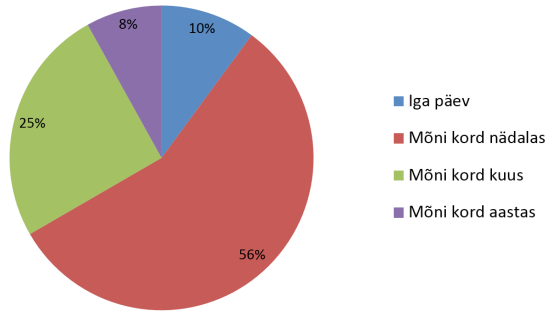
Raamatukogu külastamise sagedus ja eesmärk ning infoallikate kasutamine

Küsimusele „Kui kaua te olete olnud TTÜ Raamatukogu lugeja?“ märkis 29% vastanutest neli ja enam aastat, 23% vähem kui aasta, 18% kaks aastat ja samapalju kolm aastat ning 13% üks aasta (joonis 1).



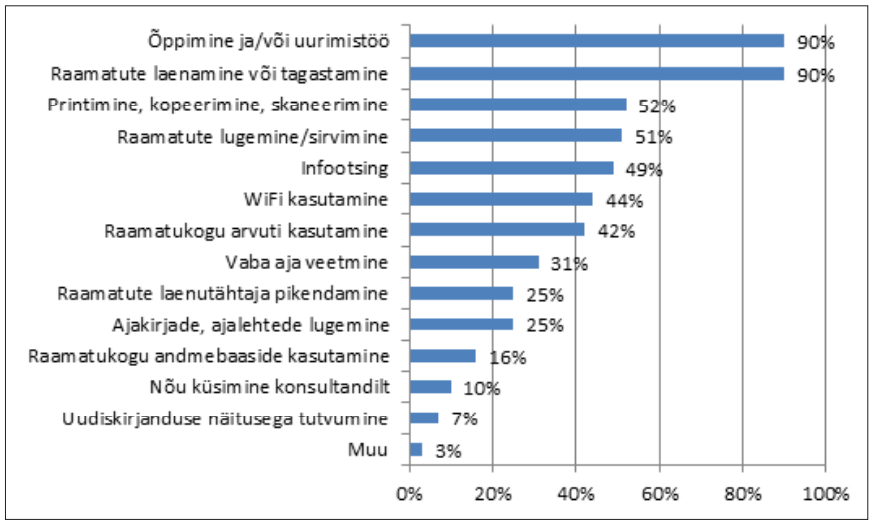
Joonis 1. Vastanute lugejastaaž TTÜ Raamatukogus

Küsisime lugejailt, kui sageli nad külastavad raamatukogu. Uuringu andmetel külastas 56% vastanutest raamatukogu mõni kord nädalas ja 25% mõni kord kuus (joonis 2). Igapäevaseid raamatukogu külastajaid oli vastanute seas 10% ning 8% külastas raamatukogu mõni kord aastas.



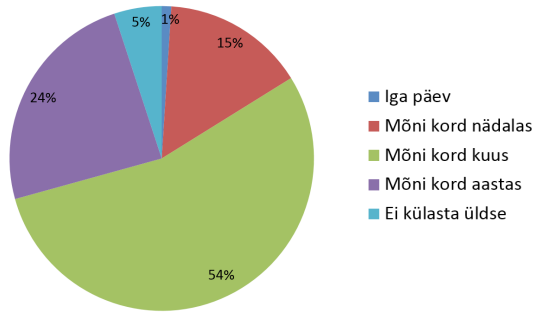
Joonis 2. Kui sageli külastatakse TTÜ Raamatukogu?

Küsimusele „Millisel eesmärgil te külastate TTÜ Raamatukogu?“ vastamisel said lugejad valida mitu eesmärki. Kõige enam on vastajad raamatukogu külastamise eesmärkidena märkinud õppimine ja/või uurimistöö ning raamatute laenamine või tagastamine (mõlemad 90% vastanutest). Raamatukogus käidi veel printimas, koopiad tegemas, skaneerimas (52%), raamatuid lugemas/sirvimas (51%), infot otsimas (49%), kasutamas WiFi-t (44%) ja arvuteid (42%), vaba aega veetmas (31%) jne (joonis 3). Vastusevariandi „muu“ alla lisati, et tehti raamatukogus kodutöid, kirjutati lõputööd, kasutati rühma- ja individuaaltööruume.



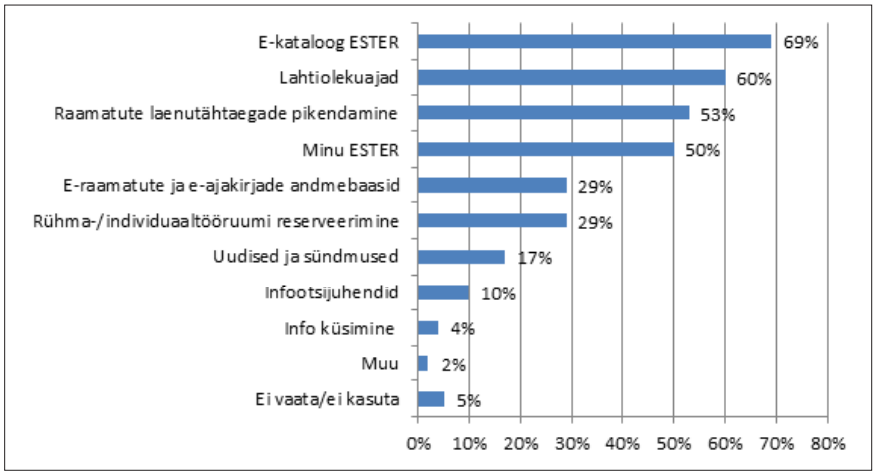
Joonis 3. Millisel eesmärgil külastatakse TTÜ Raamatukogu?

Raamatukogu veebi külastas 54% vastanutest mõni kord kuus, 24% mõni kord aastas ja 15% mõni kord nädalas (joonis 4). Iga päev külastas raamatukogu veebi 1% vastanutest. 5% vastanutest ei ole raamatukogu veebi külastanud. Viimase põhjuseks märgiti, et senini ei ole vajadust olnud ning vajaliku materjali ja info saab kätte raamatukogus kohapeal.



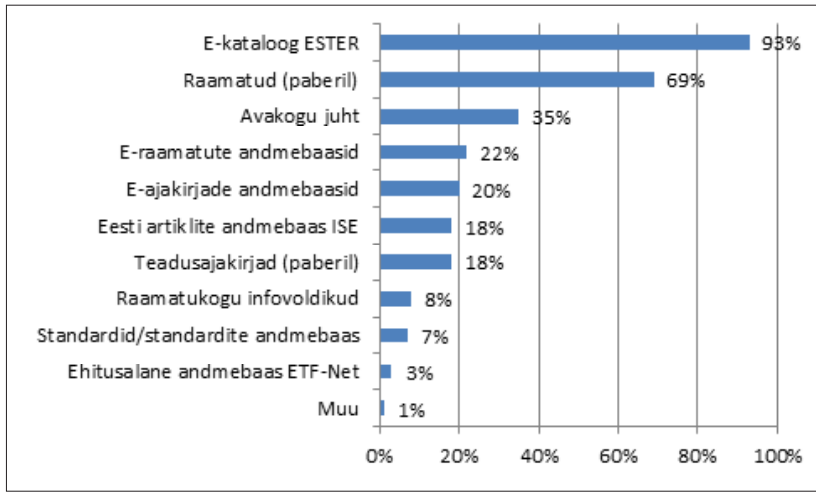
Joonis 4. Kui sageli külastatakse TTÜ Raamatukogu veebi?

Kõige enam kasutati raamatukogu veebi kaudu e-kataloogi ESTER (69% vastanutest) (joonis 5). Vaadati veel lahtiolekuaegu (60%), pikendati raamatute laenutähtaegu (53%), kasutati Minu ESTER-it (50%) jne. Vastusevariandi „muu“ alla lisasid mõned lugejad, et nad otsisid veebi kaudu telefoninumbreid, vaatasid printimisega seotud infot ja raamatute asukohti, kasutasid eesti artiklite andmebaasi ISE ja viitekirjete koostamise juhendit ning tellisid ajakirjaartikleid RVL-i kaudu.



Joonis 5. Mida vaadatakse/kasutatakse TTÜ Raamatukogu veebis?

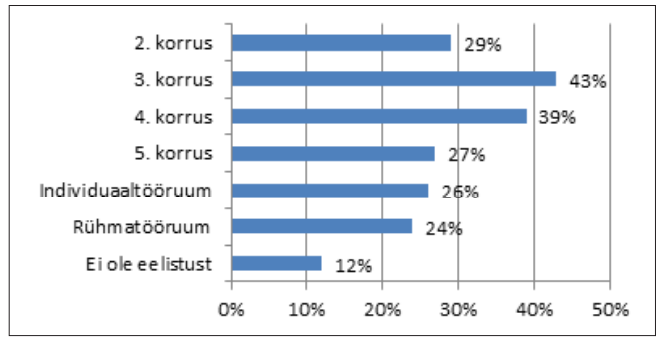
Raamatukogu infoallikatest kasutati uuringu andmetel kõige enam e-kataloogi ESTER (93% vastanutest) ja seejärel raamatuid paberil (69%) (joonis 6). Avakogu juhti kasutas 35% ning e-raamatute andmebaase ja e-ajakirjade andmebaase vastavalt 22% ja 20% vastanutest.



Joonis 6. Milliseid TTÜ Raamatukogu infoallikaid kasutatakse?

Kus eelistatakse TTÜ Raamatukogus õppida või aega veeta?

Küsimusele „Kus te eelistate TTÜ Raamatukogus õppida või aega veeta?" vastamisel said lugejad märkida mitu eelistust. Kõige enam on vastajad eelistanud 3. korrust (43% vastanutest), seejärel 4. korrust (39%), 2. korrust (29%) ja 5. korrust (27%) (joonis 7). Eelistust individuaal- ja rühmatööruumide kasutamiseks on märkinud vastavalt 26% ja 24% lugejatest. 12% vastanutest valis vastusevariandi „ei ole eelistust".



Joonis 7. Kus eelistatakse TTÜ Raamatukogus õppida või aega veeta?

Palusime lugejail oma eelistusi põhjendada. Vastajad nimetasid mitmeid koha või korruse valikut mõjutavaid tegureid, nagu lihtne ligipääs, harjumus, soov õppida üksinda või mitmekesi, sobiva paigutusega lugeja- ja arvutitöökohad, eriala- või muu kirjanduse asukoht, võimalus abi küsida või arvutit kasutada, parem WiFi leviala, vaikne keskkond, hea valgustus, aga ka ilus ja avar vaade ümbritsevale.

Raamatukogu sisse- ja väljapääs on teisel korrusel, kust pääseb ka 3., 4. ja 5. korrusele. Seetõttu on siin enam liikumist ja müra. Lugejad selgitasid, et teisel korrusel tuleb vaiksema koha leidmiseks minna teeninduskeskusest ja treppidest kaugemale. Lugejad, kes soovisid loengute vaheajal raamatukogu arvutit kasutada, valisid enamasti teise korruse. Siin on teiste korrustega võrreldes kõige rohkem arvuteid, sh arvutiklass.

Lugejate kommentaare:

„2. korrusel on liigne liikumine – kui seal tööd teen, siis ainult tagumistes nurkades, muidu on liikumine liiga segav."

„Valin tavaliselt madalama korruse, kuna ei viitsi kõrgele minna. Asukoha määrab ära vaba koha olemasolu ja väga suur mõjutaja on wifi levik."

„On vaja arvutit kasutada ja teen seda arvutiklassis."

„2. korrus on lihtsamini ligipääsetav, õpipartneritega õpin seal."

„2. korrusel on parim WIFI ja abi käepärast."

„2. korrusel käib tihe liikumine ja vadistamise, ei ole väga rahulik. Seda kasutan ainult siis, kui kiiresti vaja arvutisse minna."

Kolmandal korrusel on lugejate arvates piisavalt vaikne ja sobivad töökohad õppimiseks, õpikud käepärast, arvutid mugavalt paigutatud ja esineb vähem probleeme WiFi-ga. Üks mürarikkamaid kohti on aatriumisse ulatuv ala. Siin viibivad külastajad, kes hindavad avarust ning häid vaateid mitmele poole.

Lugejate kommentaare:

„Kolmandal korrusel, aatriumis on kõige rohkem ruumi ja vabu töökohti."

„Mulle meeldib 3. korruse avatud ruum individuaal- ja rühmaruumide juures, kuna seal on palju valgust ja see koht on hästi avar. Vahepeal on hea silmi puhata ja siis saab aknast välja vaadata."

„Meeldib istuda akende juures, seal on piisavalt palju ruumi, et saaks kursusekaaslastega kõrvuti istuda. Samal korrusel on ka õppekirjandus, kui õppimisel on vaja kasutada ja enda õpikut kaasas ei ole."

„Õpikud on 3-ndal lähedal, piisavalt vaikne, inimesi ei voori mööda!"

Neljandat korrust peavad lugejad kõige vaiksemaks, mida soodustavad vaikust palu-

vad sildid. Lugejate hinnangul on siin rohkem privaatsust, rahulik ja töine õhkkond, palju valgust ja avarust ning piisavalt kohti õppimiseks, ka WiFi-ga on vähem probleeme.

Lugejate kommentaare:

„4. korrus on kõige parem, sest seal on suhteliselt vaikne – õppimiseks on vaikust vaja."

„Olen leidnud 4. korrusel enda jaoks hea auraga õppekohad."

„4. korrus on kõige vaiksem korrus rahulikult oma asjadesse süvenemiseks."

„Eelistan 4. korrust, sest mulle meeldib õppida rahulikus ja vaikses keskkonnas."

„4. korrusel ei liigu nii palju inimesi ja on rahulikum."

„Suur osa ehitusteaduskonnast õpib 4. korrusel, hea on vajadusel konsulteerida."

„Individuaalseks õppimiseks valin 4. korruse, sest see on "vaikne korrus"."

Viies korrus sobib lugejate arvates samuti vaikselt õppimiseks. Siin saab lugeda ajalehti, ajakirju ja huvitavaid raamatuid, kuigi istekohti on vähem kui teistel korrustel. Hinnatakse ka akendest avanevat ilusat vaadet. Lugejad selgitasid:

„5. korrusel on kõige vaiksem ja rahulikum. Ilus vaade on ka."

„Eelistan 5. korrust, kuna seal on kõige vähem sagimist."

Rohkem privaatsust hindavad külastajad eelistavad individuaaltööruume. Lugejad kommenteerisid:

„Individuaalruumis on väga mugav, keegi ei häiri ja võid täielikult keskenduda oma tööle."

„Individuaaltööruumis saab rohkem keskenduda ja töö on sisukam."

„Üksi õppimiseks eelistan individuaaltööruumi, sest selles on kõige rahulikum."

Väga populaarsed on lugejate seas rühmatööruumid. Lugejad põhjendasid oma eelistust järgmiselt:

„Saab oma rühmaga hästi tööd teha, teisi segamata."

„Sest mulle meeldib sõpradega õppida."

„Rühmatööruumis saab olla suurema seltskonnaga ja omavahel teisi segamata suhelda."

„Rühmaruume on hea kasutada, kui on vaja midagi kamba peale teha või näiteks eksamiteks valmistuda. Saab mugavalt vestelda ja üksteisele küsimusi esitata. Samas aga ei häiri rääkimine teisi raamatukogu külastajaid."

„Rühmatööde tegemiseks ei ole TTÜs raamatukogule head alternatiivi."

Vaba aja sisustamine raamatukogus

Küsimusele „Kas TTÜ Raamatukogu on koht, kus oma vaba aega sisustada?“ vastas 84% uuringus osalenutest jaatavalt ja 16% eitavalt. Küsimusele vastajad said ise otsustada, kuidas mõtestada enda jaoks vaba aega. Sellest lähtuvalt kommenteerisid lugejad oma vastust, andes sealjuures hinnanguid ka raamatukogu keskkonnale.

Paljud jaatavalt vastanud üliõpilased selgitasid, et käivad vabal ajal raamatukogus õppimas. Nende vastajate hinnangul on raamatukogus rahulik ja vaikne ning seega õppimist ja keskendumist soodustav keskkond. Kommentaarides märgiti veel, et raamatukogus on kättesaadavad vajalikud infoallikad ja siin saab kasutada arvutit. Meeldiva õhkkonna loovad lugejate arvates kaasaegne ja ilus interjöör, head värvilahendused ning sõbralikud töötajad. Raamatukogu keskkonda iseloomustati veel sõnadega „mugav“ ja „hubane“.

Lugejate kommentaare:

„Kui vaba aega kasutada õppimiseks või kodutööde tegemiseks on TTÜ raamatukogu ideaalne koht, kuna pakub meeldivat töökeskkonda ilma segavate faktoriteta.“

„Minu jaoks on õpingud vaba aja sisustamine ning sellel eesmärgil on raamatukogu väga hea kasutada.“

„Veedan oma vaba aja õppides või kirjandust uurides. Selleks on raamatukogu suurepärane :)“

„Tudengi vaba aeg kulub õppimisele ning siin on seda hea teha.“

„Rahulik ja vaikne keskkond. Välimuselt kena ja kõik õppimisvõimalused on tagatud.“

„Raamatukogus on palju parem keskenduda kui kodus.“

„Hea koht, kus tegeleda õppetööga. Kodus on raskem keskenduda.“

„Hubane, samas modernne atmosfäär ja teised õppivad tudengid motiveerivad ja lihtsustavad õppimist.“

„Ilus interjöör ja hea õhkkond inspireerib tööd tegema.“

„Siin on võimalik nii õppida, kui ka lihtsalt lugeda midagi meeldivas õhkkonnas ja mugavas keskkonnas.“

„Saab ka rahulikult õppida, mõne inimesega kohtuda või niisama arvutis uudiseid lugeda. Põhiline on see, et on koht istumiseks ja on vaikus.“

„Siin on olemas arvutid, mida saab kasutada ja siin on hea vaikne, seega mõte töötab paremini ja õppida on kogu aeg vaja, mida on raamatukogus lihtne korraldada.“

„Palju lugemismaterjali, arvutid, vaikne.“

„Hubane, komfortne koht, sõbralikud töötajad.“

„Heade värvilahendustega rahulik töökeskkond + elektrikontakte on piisavalt ja wifi on kättesaadav."

Üliõpilased kohtuvad raamatukogus ka sõpradega ja tegelevad õppeülesannetega mitmekesi:

„Raamatukogu pakub võimalusi nii sõpradega koos oma õppematerjale läbi vaadata või muudel huvitavatel teemadel vestelda. Lisaks on materjalide kättesaadavus suhteliselt hea ja raamatukogu töö hästi organiseeritud."

„Meeldiv õhkkond eelkõige, hea rahulik. 2-3-kesti tulles saab ka lõbusalt koolitöid tehtud, ilma et oleks liigselt segavaid faktoreid. (Nagu nt tudengimaja, ka väga tore koht, kus aega veeta ja õppida, kuid mõtted liiguvad ikka alati mujale)."

„Kui pikemalt ette registreerida rühmatööruumid, siis saab terve päeva sõpradega õppida, rääkida ning meelt lahutada."

Üliõpilastele meeldib raamatukogus loengutevahelist aega sisustada – tutvutakse uute raamatute, ajakirjade ja ajalehtedega ning kasutatakse arvuteid, internetti ja WiFi-t nii õppimise kui ka meelelahutuse eesmärgil. Lugejate kommentaare:

„Kui tunniplaanis tekib auk, siis on see hea koht, kus asjalikult oma vaba aeg veeta, kuna siin saab vaikuses õppida."

„Kui õppetundide vahel on aken, siis kindlasti veedan oma vaba aega raamatukogus, nii õppimise kui ka meelelahutuse (raamatute lugemine, internetis surfamine) eesmärgil."

„Loengutevahelist aega on hea kasutada õppimiseks ja raamatukogu on just õige koht, kus seda teha. Niisama sõpradega siin aega ei veeda."

„Loengute vahel hea koht, kus materjale üle vaadata, st siin on soodustav atmosfäär. Hea WIFI ja arvutid muuks meelelahutuseks."

„Loengute vahel ideaalne koht, kus võib veeta kaks tundi mingi kasumiga."

„Vahel on hea niisama huvitavaid raamatuid sirvida. Ei pea alati palavikuliselt õppima!"

„Raamatukogus saab vabal ajal uurida raamatuid ja leida põnevaid teadusajakirju, mida saab õppetöös kasutada."

„Raamatukogus saan end mugavalt sättida kuskile nurka ja lugeda midagi."

„Seal saab rahulikult istuda, mugavalt ajakirju, huvialakirjandust sirvida või koolitööd teha, ruumid on ilusad ka."

Raamatukogus pikemalt viibijatele meeldib, et lähedal asuv kohvik on avatud hommikust õhtuni ja vahepeal saab käia keha kinnitamas.

Mõned lugejad tegid ettepaneku sisustada raamatukogus mingi nurgake või ruum vaba aja veetmiseks:

„Kuigi tudengimajas on see võimalus loodud, siis teatud seltskond eelistab seda teha raamatukogus, sest keskkond on tunduvalt mõnusam."

„Võiks olla mängude ruum, kus oleks lahedaid vidinaid täiskasvanutele, Kinect, lauamängud ja muu säärane."

„Vaiksete lauamängude nurk oleks ka hirmsasti lahe, nt male/kabe."

Üks lugeja arvas: *„Tõenäoliselt veedan oma vaba aega hea meelega TTÜ raamatukogus ka siis, kui õpingud on lõpetatud."*

Lugejad, kes vastasid, et nad vaba aega raamatukogus ei sisusta, selgitasid oma seisukohta järgmiselt:

„Siin pole midagi muud peale lugemise ja õppimise teha."

„Mina suhtun sellesse kohta rohkem nagu õppekeskkonda, kus ei ole mugav vaba aega veeta."

„Võib, aga pole mõtet... Raamatukogu on ikkagi töötegemise koht. Kuigi vaikse kohana sobib ka meelelahutuslikuks lugemiseks."

„Raamatukogu pole vaba aja veetmise koht, küll on aga TTÜ Raamatukogus väga hea oma õppimisaega sisustada, kuna on loodud väga head tingimused õppimiseks."

„Kasutan raamatukogu rohkem õppetööga seoses. Vaba aega on üldse TTÜ üliõpilasena üsna vähe."

„Raamatukogu peaks olema koht, kus saaks võimalikult vaikselt õppida ja/või lugeda. Vaba aja sisustamiseks on Tudengimaja."

Rahulolu TTÜ Raamatukogu teenustega

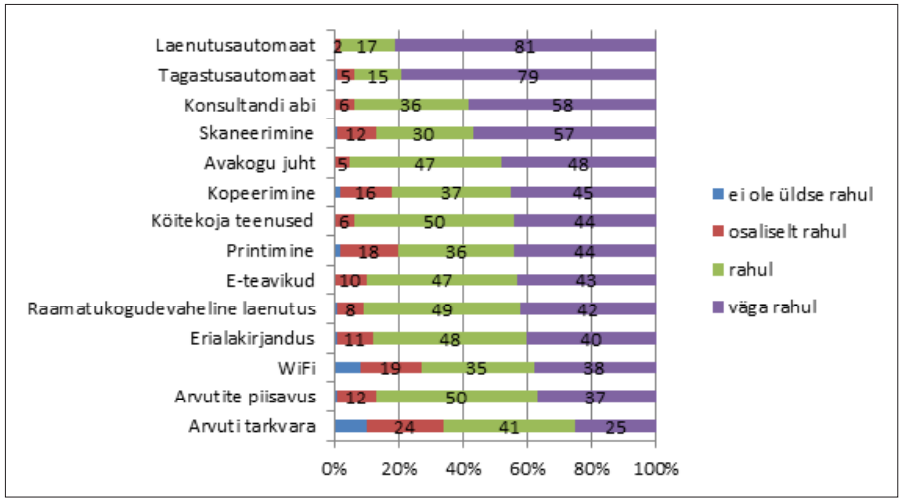
Uuringus osalenute rahuloluhinnangud raamatukogu teenustele on näha tabelis 3 ja joonisel 8. Hinnanguid küsisime skaalal: *ei ole üldse rahul, osaliselt rahul, rahul, väga rahul*. Tabelis on toodud ka vastanute arvud, kes hinnangu andsid ja kes märkisid „ei oska öelda".

Erialakirjanduse kättesaadavus ja juurdepääs e-teavikutele

Erialakirjanduse kättesaadavusega oli rahul või väga rahul 88% vastanutest. Lugejatele meeldib, et palju raamatuid on avariiulitel ja nad saavad ise sobivad õpikud välja valida. Kommentaarides märgiti, et kõik on kergesti leitav, materjalide kättesaadavus hea ja vajalikud õpikud olemas. Mõned vastajad nimetasid aga ka erialasid, milles on vähe kirjandust (rahvusvahelised suhted, infotehnoloogia, materjaliteadus ja –tehnoloogia) või õpikute eksemplaarsus väike. Näiteks tehti ettepanek: *„Oleks vaja rohkem erialaseid raamatuid, mis läheksid teemasse sügavuti sisse. Tuleks sundida*

Tabel 3. Rahulolu TTÜ Raamatukogu teenustega

	ei ole üldse %	osaliselt rahul %	rahul %	väga rahul %	Hinnangu andnud vastanute arv	Vastanute arv, kes märkisid „ei oska öelda“
Erialakirjanduse kättesaadavus	1	11	48	40	262	29
Juurdepääs e-teavikutele	0	10	47	43	209	82
Avakogu juht	0	5	47	48	217	74
Raamatukogude-vaheline laenutus (RVL)	1	8	49	42	92	199
Konsultandi abi	1	5	36	58	228	63
Printimine	2	18	36	44	197	94
Kopeerimine	2	16	37	45	163	128
Skaneerimine	1	12	30	57	169	122
Laenutusautomaat	0	2	17	81	246	45
Tagastusautomaat	1	5	15	79	239	52
Arvutite piisavus	1	12	50	37	214	77
Arvuti tarkvara	10	24	41	25	190	101
WiFi	8	19	35	38	253	38
Köitekoja teenused	0	6	50	44	68	223



Joonis 8. Rahulolu TTÜ Raamatukogu teenustega (%)

õppejõude raamatuid tellima." Üks magistrant avaldas soovi, et ka üliõpilastel oleks võimalus teha ettepanekuid teaduskirjanduse hankimiseks raamatukogusse.

Lugejad ei ole rahul, et palju raamatuid, sh ilukirjandust saab kasutada ainult raamatukogus kohapeal. Lisaks on mõnede raamatute laenutähtaja pikkus lugejate arvates lühike. Sooviti veel, et raamatukogu telliks rohkem ajakirju, sh vene jt keeltes.

Üks lugeja oli huvitatud, miks on kehtestatud limiit korraga kojulaenutatud raamatute arvule. Limiidi olemasolu paneb lugejaid reaalselt hindama, kui palju raamatuid ollakse valmis korraga läbi töötama arvestades laenutähtaegu. Laenutähtaegade ületamisel tuleb tasuda viivist – mida rohkem tähtaja ületanud raamatuid, seda suurem viivis. Limiitide kehtestamisel erinevate lugejagruppide jaoks (TTÜ üliõpilased ja töötajad ning lugejad väljastpoolt TTÜ-d) arvestati, kui palju oli lugejatel keskmiselt korraga kojulaenutatud raamatuid.

Juurdepääsuga e-raamatutele, e-ajakirjadele ja andmebaasidele oli rahul või väga rahul 90% vastanutest. Mõned lugejad soovisid veel suuremat e-teavikute valikut ning rohkem juhiseid nende kättesaadavuse ja kasutamise kohta. Lugejad olid huvitatud ka koolitusest, kuidas otsida ja hankida erinevaid infoallikaid, sh standardeid. Lugejate kommentaare:

„E-raamatutele ja e-ajakirjadele ligipääsu on vähe selgitatud või pigemini võiks olla kohapeal lihtne ja loogiline õpetus, sest kui harva kasutan, siis ununeb, kuidas ligipääsu sain."

„Andmebaasid võiksid rohkem kättesaadavamad olla, st kui ise ei oska neid kasutada, siis üldjuhul neid ei kasutagi - juhendid võiksid käepärasemad olla ja "reklaam" nende kohta suurem."

Raamatukogudevaheline laenutusele (RVL) andsid oma hinnangu 92 lugejat, kellest 91% oli selle teenusega rahul või väga rahul. 199 küsimustikule vastajat märkisid „ei oska öelda". Viimaste seas võis olla lugejaid, kes ei ole RVL-i kasutanud.

Avakogu juht. Konsultandi abi

Raamatute asukoha leidmisel avakogust on abiks elektrooniline avakogu juht. Avakogu juhiga oli rahul või väga rahul 95% vastanutest. Üks lugeja märkis: *„Vahel on mõne raamatu leidmine mulle problemaatiline, aga üldiselt on siiski loogiline ja avakogu juht on väga palju abiks, mis õige riiuli kätte näitab."*

Teavikute ja info leidmisel on raamatukogu kõigil korrustel abiks töötajad. Konsultandi, sh teenindajate abiga oli rahul või väga rahul 94% vastanutest. Üks lugeja kirjutas: *„Üldjuhul ei kipu väga küsimusi olema, kuid olen ka infot küsinud ja meeldiv on, et vastatakse väga kiiresti ja asjaliku informatsiooniga."*

Mõned lugejad väljendasid teatud ootusi raamatukogutöötajate suhtes. Näiteks, kui tekib järjekord laenutusautomaadi juures, siis võiks töötaja paluda ootajatel pöör-

duda teenindusletti. Tehti ettepanek, et teenindusletis laenutust vormistades võiks töötaja lugejale anda sedeli laenutähtajaga, nagu selle saab laenutusautomaati kasutades. Sooviti veel abi raamatute leidmisel riiulitelt: *„Raamatud lähevad sageli segi ja siis ei ole võimalik leida otsitavat raamatut. Igal korrusel võiks olla abiline, kes abistaks raamatute leidmisel.“*

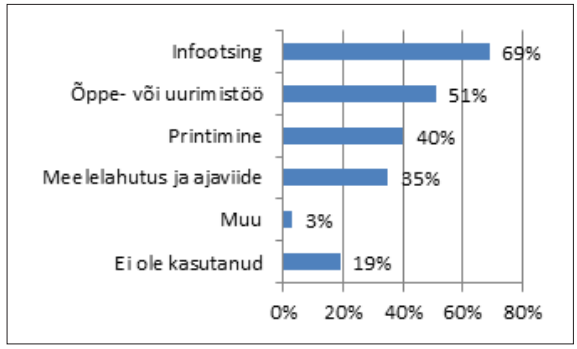
Kommentaarides väljendasid paljud vastajad oma rahulolu teenindusega ja tunnustasid töötajate tublidust ja pädevust, sõbralikkust ja kiirust teenindamisel.

Laenutusautomaat ja tagastusautomaat

90% uuringus osalenutest märkis raamatukogu külastamise üheks eesmärgiks raamatute laenamise või tagastamise. 43% nii laenutustest kui ka tagastustest vormistasid lugejad ise automaadi abil (2012. aasta andmed). Lugejad hindasid väga kõrgelt raamatute laenutusautomaadi ja tagastusautomaadi kasutamise võimalust (rahul või väga rahul oli vastavalt 98% ja 94%). Mõned rahulolematust väljendavad märkused olid seotud seadmete aeg-ajalt esinevate riketega. Tehti ettepanek, et laenutusautomaadil võiks olla valik „tšekki mitte printida“. Lisaks märgiti, et juurdepääs tagastusautomaadile võiks olla ööpäev läbi. Sooviti veel, et raamatute tagastusautomaat võiks olla ka majandus- ja sotsiaalteaduskonna välisukse juures.

Arvutid ja WiFi

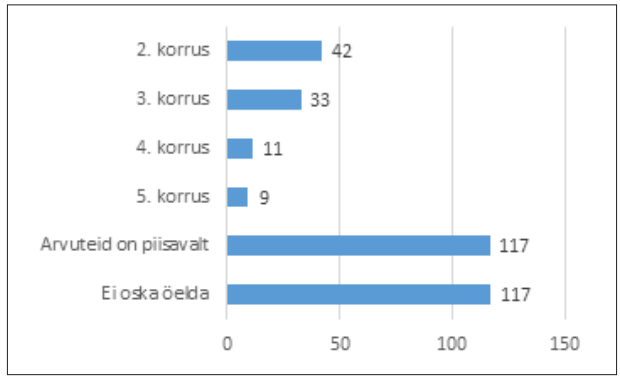
Küsisime lugejailt, millisel eesmärgil nad on kasutanud raamatukogu arvuteid (vastamisel sai valida mitu eesmärki). Uuringu andmetel on 69% vastanutest kasutanud arvuteid info otsimiseks, 51% õppe- või uurimistöö vajadusteks, 40% printimiseks ning 35% meelelahutuseks ja ajaviiteks (joonis 9). Lugejad, kes valisid vastusevariandi “muu”, lisasid järgmisi tegevusi: skaneerimine, e-kirjade lugemine ja saatmine, uudiste lugemine, pangateenuste kasutamine. 19% vastanutest ei ole raamatukogu arvuteid kasutanud.



Joonis 9. Millisel eesmärgil kasutatakse TTÜ Raamatukogu arvuteid?

Arvutite piisavusega raamatukogus oli rahul või väga rahul 87% vastanutest. Mõned lugejad kurtsid, et loengutevahelisel ajal on raamatukogu arvutid hõivatud. Näiteks ühe lugeja kommentaar: *„Arvuteid võiks mõned rohkem olla. Loengute vahelistel aegadel vahel ei pääse löögile.“*

Palusime lugejatel täpsustada, millistel korrustel peaks nende arvates olema rohkem arvuteid (vastamisel sai valida mitu korrust). Suurem osa vastanutest valis vastusevariandi „arvuteid on piisavalt“ või „ei oska öelda“ (joonis 10).



Joonis 10. Millistel korrustel peaks olema rohkem arvuteid? (vastajate arv)

Raamatukogutöötajad on täheldanud, et väga sageli kasutatakse arvuteid 2. korruse teeninduskeskuse vastas, mis on lähedal raamatukogu sisse- ja väljapääsule. See on ilmselt sobivaim koht, kui tullakse arvuteid kasutama loengute vahel lühikeseks ajaks. Samas oli uuringu läbiviimise ajal 2. korruse arvutiklassis piisavalt vabu arvuteid. Viimase põhjuseks võis olla mõnede lugejate teadmatus arvutiklassi kasutamise võimalusest või eelistus teiste raamatukogu arvutite kasutamiseks.

Arvutis kasutamiseks vajaliku tarkvaraga oli rahul või väga rahul 76% vastanutest. Uuringu läbiviimise ajal paigaldati raamatukogu arvutitesse tarkvara MS Office 2010, mida paljud lugejad olid juba varem soovinud. Sooviti veel, et raamatukogu arvutites saaks kasutada ka muud tarkvara, nagu Autocad, Photoshop, Revit jt. Lugejaid häirib, et ID-kaarti ja mälupulka saab kasutada ainult 2. korruse arvutites ja skaneerimise arvutites. Raamatukogu 3., 4. ja 5. korrusel on terminalarvutid, mis hetkel veel ei võimalda kasutada mälupulka ega muid USB seadmeid.

WiFi-ga raamatukogus oli rahul või väga rahul 73% vastanutest. Rahulolematud lugejad kommenteerisid, et WiFi on kohati väga aeglane, mõnedes kohtades on täiesti puudulik, internet jookseb tihti kokku. WiFi levi ja kiirus oli eri korrustel erinev – seda eriti just päevasel ajal, kui kasutajaid oli rohkem. Vahetult enne lugejauurin-

gut tehti ülikoolis WiFi levi parandamiseks muudatusi konfiguratsioonis. Seega võis vastanute hinnanguid mõjutada varasem WiFi kasutamise kogemus.

Üks üliõpilane kirjeldas oma muret järgmiselt: *„TTÜs antakse päris palju teste, mida peab lahendama aja peale. Kui tulla seda tegema raamatukogusse ning teha seda üle WIFI, on tulnud ette olukordi, kus internetiühendus on nii aeglane, et ei jõua küsimusi väljagi laadida. Sellega kaotan aega testi lahendada, mis mõjutab omakorda mu hinnet."*

Printimine, kopeerimine, skaneerimine

52% uuringus osalenutest märkis, et üheks tegevuseks raamatukogu külastamise ajal on printimine, koopiate tegemine või skaneerimine. Skaneerimisega oli rahul või väga rahul 87%, kopeerimisega 82% ja printimisega 80% vastanutest.

Printimis- ja kopeerimisteenust raamatukogus pakub Overall AS. Lugejad kommenteerisid, et printimisel esineb tõrkeid, tihti on järjekorrad, juhend on keeruline, pdf failide printimine ei toimi ladusalt, pilveprindi teenus on kallis ja printimine aeganõudev. Lugejate ettepanekul võiks olla rohkem juhiseid ja infosilte, kõrvaldada rikkeid jooksvalt, võimalus printida ID-kaardita ja arveldada ka sularahas.

Üks lugeja tunnistas, et ta ei teadnud pikka aega võimalusest kasutada kõiki raamatukogu arvuteid printimistööde saatmiseks seadmetesse. Lugeja soovitas: *„Võiks olla rohkem infosilte, et kõikidest arvutitest saab printida. Peale 1,5 aastat tuli see suure üllatusena."*

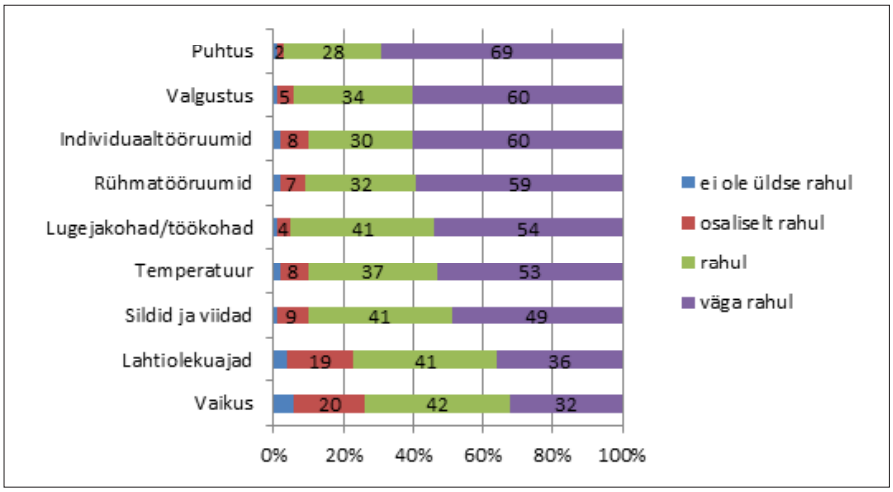
Üks vastaja oli huvitatud võimalusest skaneerida mahukamaid töid professionaalsema seadmega ja lisas, et ta ei ole sellist raamatukogu teenust veel avastanud.

Rahulolu töötingimuste ja keskkonnaga TTÜ Raamatukogus

Uuringus osalenute rahuloluhinnangud töötingimustele ja keskkonnale raamatukogus on näha tabelis 4 ja joonisel 11. Hinnanguid küsisime skaalal: *ei ole üldse rahul*, *osaliselt rahul*, *rahul*, *väga rahul*. Tabelis on toodud ka vastanute arvud, kes hinnangu andsid ja kes märkisid „ei oska öelda".

Tabel 4. Rahulolu töötingimuste ja keskkonnaga TTÜ Raamatukogus

	ei ole üldse %	osaliselt rahul %	rahul %	väga rahul %	Hinnangu andnud vastanute arv	Vastanute arv, kes märkisid „ei oska öelda“
Lahtiolekuajad	4	19	41	36	289	2
Lugejakohad/ töökohad	1	4	41	54	286	5
Individuaaltöö-ruumid	2	8	30	60	202	89
Rühmatööruumid	2	7	32	59	200	91
Sildid ja viidad	1	9	41	49	281	10
Valgustus	1	5	34	60	290	1
Temperatuur	2	8	37	53	290	1
Vaikus	6	20	42	32	286	5
Puhtus	1	2	28	69	288	3



Joonis 11. Rahulolu töötingimuste ja keskkonnaga TTÜ Raamatukogus (%)

Lahtiolekuajad

Raamatukogu lahtiolekuaegadega oli rahul või väga rahul 77% vastanutest. Lugejad soovisid pikemaid lahtiolekuaegu nii tööpäeviti kui nädalavahetusel. Mõned lugejad tahaksid, et raamatukogu avatakse tööpäeviti juba kella kaheksast. Enamasti siiski sooviti, et raamatukogu oleks kauem avatud õhtuti. Sealjuures viidati Tartu Ülikooli Raamatukogu pikemale lahtiolekuajale. Sooviti veel, et mõni ala raamatukogus

võiks lahti olla lausa ööpäev läbi. Leidus lugejaid, kelle arvates võiks raamatukogu ka suvel kauem lahti olla. Kaugõppijad kurtsid, et raamatukogu lahtiolekuajad on ebasoodsad. Positiivse märkusena lisati, et raamatukogu on kauem avatud eksamiteks valmistumise perioodidel. Lugejad põhjendasid oma soove:

„Lahtiolekuaeg võiks olla pikem, kuna tudengitele meeldib raamatukogus õppida. TTÜ alal ainus hea koht õppimiseks ongi raamatukogu – teisi õpperuume TTÜ ei paku."

„Pikkade päevade tõttu lükkuvad mahukamad tööd tihti nädalavahetusse, mil kahjuks ligipääs raamatukogule on väga üürike."

„Pühapäeviti või mõni õhtu võiks raamatukogu poole ööni lahti olla. Õppimistuhin tabab aegajalt keset ööd."

„Raamatukogu võiks avatud olla ka nädalavahetustel. Laupäeval ta küll on, kuid võiks olla kauem ning avatud ka pühapäeviti. Naudin väga TTÜ Raamatukogus käimist, teeksin seda nädalavahetustel ka, atmosfäär õppimiseks on väga hea."

Mõned lugejad ei olnud rahul, et köitekoda suletakse juba kell 15:00. Üks lugeja märkis: *„Köitekoja lahtiolekuaeg on liiga lühike – ei jõua kasutada."*

Lugejakohad/töökohad, individuaal- ja rühmatööruumid

90% uuringus osalenutest märkis, et külastavad raamatukogu õppimise ja/või uurimistöö eesmärgil. Kui rahul olid lugejad võimalustega kohapeal töötamiseks? Lugejakohtade/töökohtadega oli rahul või väga rahul 95% vastanutest. Näiteks üks lugeja kirjutas: *„Raamatukogus on palju kohti istumiseks, laudadel on hea valgustus."* Mõnede lugejate arvates oli sõltuvalt kellaajast õppimiskohti siiski vähe.

Rühmatööruumidega oli rahul või väga rahul 91% ja individuaaltööruumidega 90% vastanutest. Üks lugeja väljendas oma rahulolu tööruumidega järgmiselt: *„Tööruumides saab rahulikult õppida, kirjutada uurimistöid jne, seda kas üksinda või koos."*

Individuaaltööruumide puhul hindasid lugejad nende mugavust ja privaatsust, mis soodustab keskendumist. Samuti peeti oluliseks võimalust reguleerida temperatuuri ruumis.

Eriti nõutud on aga kuus kaheksakohalist arvutiga varustatud rühmatööruumi. Üliõpilastel on aeg-ajalt vaja tegeleda õppetööga rühmatöö vormis või soovitakse mitmekesi koos õppida. Näiteks ühe lugeja kommentaar: *„Koos on hea eksamiteks valmistuda – mugav vestelda ja üksteisele küsimusi esitada."* Rühmatööruumide puhul hinnati nende avarust, mugavust ja sobivaid töötingimusi. Mitme vastaja kommentaaris viidati ka sellele, et rühmatööruumis saab vestelda teisi lugejaid häirimata.

Probleemina toodi välja juhused, kui rühmatööruumi reserveerinud lugejad ei ole kohale tulnud ega reserveeringut tühistanud. Lugejate ettepanekul võiks raamatu-

kogus olla rohkem võimalusi rühmatöö tegemiseks, kuna rühmatööruumid on sageli hõivatud ja neid ei saa reserveerida soovitud ajaks. Üks lugeja kurtis:

„Ei ole rahul rühmatööruumide vähesusega. Kuna semestri lõpupoole on suur tung nendele ruumidele, siis raske on isegi ette reserveerides löögile saada."

Rühmatööruumidesse sooviti rohkem pistikupesasid, et rahuldada sülearvutitega lugejate vajadusi. Uuringu läbiviimise ajal paigutatigi igasse rühmatööruumi kuue pesaga pikendusjuhe. Sooviti veel, et raamatukogus leiduks vabu toole, mida saaks kasutada lisatoolina individuaaltööruumis. Üks lugeja selgitas:

„Raamatukogus võiks kuskil olla vabu toole, mida saaks võtta ja kasutada individuaaltööruumides – enamus laboritöid sel semestril on mul olnud paaristööd ning laboripartneriga mahub väga kenasti ühte individuaaltööruumi."

Nüüd ongi igasse individuaaltööruumi lisatud klapptool, et kahekesi õppimist võimaldada. Kuigi individuaal- ja rühmatööruumide kasutamine on aktiivne, leiti, et nende ruumide olemasolust ja võimalustest võiks külastajaid rohkem informeerida.

Vaikus

Õppimiseks ja keskendumiseks vajavad lugejad vaikset keskkonda. Vaikusega raamatukogus oli rahul või väga rahul 74% vastanutest. Rahulolevad lugejad kinnitasid, et raamatukogu keskkond soodustab õppimist ja süvenemist. Näiteks ühe üliõpilase hinnang: *„TTÜ raamatukogu motiveerib mind alati õppima, sest keskkond on vaikne ja sõbralik."* (Vt veel lugejate kommentaare lk. 144–146).

Rahulolematust põhjustasid näiteks lugejad, kes rääkisid valjusti omavahel või telefoniga. Küsimustikule vastajad selgitasid:

„Mõnikord soovin õppida, aga ei saa, sest kõrvalviibijad räägivad natuke valjusti."

„Kuigi TTÜ raamatukogus on palju sopikesi, kus saab vaikselt oma raamatuid lugeda, satub ikka vahel kõrvale mõni seltskond, kes juhib tähelepanu kõrvale."

„Inimesed räägivad telefoniga ning teevad rühmatöid riiulite vahel töökohtadel."

„Ei ole rahul lärmiga raamatukogus. TTÜ tudengitel puudub arusaam raamatukogust kui kohast, kus vaikselt olla. Ei arva, et ainult 4. korrus peaks olema vaikuse korrus, sest ainult üks korrus ei paku piisaval arvul õppimiskohti tudengitele, kes vaikuses õppida tahavad. Samuti olen ise puutunud kokku juhtudega, kus tudengid ka 4. korrusel kõva häälega jutustavad."

Lugejate ettepanekul võiks raamatukogus olla rohkem vaikust paluvaid silte, laenutada kõrvaklappe, „telefoniputkad" mobiiliga rääkimiseks, teha tudengite seas teavitustööd ja raamatukogutöötajad peaksid valjusti rääkivaid külastajaid enam korrale

kutsuma. Näiteks üks lugeja kirjutas: *„Vajadusel noomida neid, kes ei oska olla viisakalt. Muidu on rahulik keskkond, aga sessi ajal on stressis olekus täielik vaikus ülimalt oluline."*

Sildid ja viidad

Teavikute leidmist ja teenuste kasutamist raamatukogus hõlbustavad sildid ja viidad. Siltide ja viitadega oli rahul või väga rahul 90% vastanutest. Kommentaaridest selgus, et lugejatel on vahel raskusi raamatute ülesleidmisega riiulitelt ning suunavatest siltidest UDK indeksite ja nimetustega riiulite otstes alati ei piisa. Lugejate ettepanekul võiksid sildid olla enam silmatorkavad ja ka riiulite vahel rohkem viitasid ja juhiseid raamatute otsimiseks kohaviida järgi. Lugejad kirjeldasid oma muret järgmiselt:

„Raamatuid ei ole teinekord lihtne üles leida, süsteem ja märgistus kuidagi mitte silmahakkav."

„Sildid riiulite otstes on väga väikeses kirjas, pigem jäävad silma riiulite numbrid, aga nende järgi orienteerumiseks peab vaheetapina kasutama avakogu juhti."

„Väga keeruline on leida raamatut üles, isegi kui on otsitud välja kohaviit. Riiuli ees olles ei saa ikka aru mitte midagi. Kuidagi lihtsam võiks olla."

„Ei saa täpselt aru, kuidas peaks riiuli pealt õige raamatu leidma. Kui õige riiuli ülesleidmine on väga lihtne, siis sealt konkreetse raamatu leidmine on keeruline. Võib-olla on selleks ka oma juhis/juhend – kahjuks ei ole sellest teadlik."

Valgustus, temperatuur, puhtus

Valgustusega oli rahul või väga rahul 94% vastanutest. Mõned lugejad juhtisid tähelepanu puudulikule valgustusele teatud piirkonnas, eeskätt arvutite ja printerite juures. Valgustuse korrigeerimiseks soovitati teha täiendavaid mõõtmisi ja lisada valgusteid.

Lugejate kommentaare valgustuse kohta:

„Valgustuse headus sõltub asukohast, mõnes kohas on väga hea, mõnes halvem."

„Valgustus on värelev kõikidel koht- ja üldvalgustitel, mis väsitab silmi ning teeb uimaseks."

„Arvan, et raamatukogu on liiga ülevalgustatud, päevavalgust on see eest vähe. Ainus koht, kus valgustuse ja päevavalguse tase enam-vähem normis (arvamus!), on kolmandal korrusel ees nurgas trepi kohal asuv ala."

Temperatuuriga oli rahul või väga rahul 90% vastanutest. Mõned lugejad kurtsid, et raamatukogus on jahe ja pikemal istumisel hakkab lausa külm.

Lugejate kommentaare temperatuuri kohta:

„Kui istuda kaua, tahaks veel midagi selga panna, käed lähevad külmaks."

„Natuke jahedavõitu, aga see hoiabki pea värskena!"

„Individuaalruumides veider temperatuur. Ainult külm, või siis õhuvaba..."

Puhtusega oli rahul või väga rahul 97% vastanutest. Mõned lugejad märkisid, et töölauad on puhastamata ja WC-d on õhtuks mustad. Sooviti veel, et raamatukogus võiks olla rohkem prügikaste.

Täiendavad märkused ja ettepanekud

Lugejate arvates võiksid viivised olla väiksemad. Üks lugeja tegi ettepaneku, et viivise tasumisel saaks teha „ettemakse" vastavale kontole, millele kogunenud summat võiks kasutada järgnevate viiviste maksmiseks.

Mõned lugejad peavad ebamugavaks raamatukogusse sisenemise süsteemi ID-kaardiga ja pakuvad välja alternatiivseid lahendusi. Näiteks:

„Sisenemine ID-kaardiga! See võib teie arvutuste järgi küll võtta vaid mõne sekundi, aga ID-kaardi väljaotsimine rahakotist ja lugemine – see kõik on talutav, kui külastada raamatukogu kord semestris. Aga kui külastada pidevalt ja seal õppida ning mitu korda päevas siseneda, siis on ebamugavamat võimalust kui ID-kaart raske välja mõelda. Siseneda võiks saada ka uue kiibiga üliõpilaspiletiga või Ühiskaardiga – nii saaks kasutada kiiret kiiplahendust ning ei peaks iga kord ID-kaarti välja otsima (üliõpilaspiletit või ühiskaarti võib ju hoida ka kuskil käepärases taskus. ID-kaarti ju ei hoia nii käepärases kohas, vaid ikka korralikult rahakoti vahel!)."

Külastajad tahaksid end raamatukogus tunda veelgi mugavamalt ja kodusemalt. Lugejad tegid mitu ettepanekut:

„Siin võiks olla mingisugune külma-sooja joogiaparaat (nt 2. korrusel sissepääsu juures); kuid ise pole veel suurt vajadust selle järgi tundnud ja ei tea, kas see sobib kokku raamatukogu eeskirjadega."

„Kahju, et õppima tulles kohvi/kakaod ei või juua. Saan põhjustest aru, kuid kahju ikka."

„Söögi ja joogi osas võiksid olla kerged järeleandmised, kuna enamus inimesi oskab nii süüa, et ei aja kõike maha, nii et ei oleks hullu, kui keegi laua taga istudes vaikselt võileiba nosib või pudelist vett joob."

Lugejad väljendasid ka oma positiivseid kogemusi raamatukogu kasutamisel. Lugejate kommentaare:

„Kõik on minu arvates korras ja teenindus on sõbralik ja leiab alati selle, mida otsid. Jõudu ja jaksu kvaliteedi säilitamisel!"

„Hetkel arvan, et kõik vajalik on olemas ning ei suudagi välja mõelda, mis veel paremaks seda teha saaks."

„Minu jaoks on kõik väga hästi – eelistan TTÜ Raamatukogu kõikidele Tallinna raamatukogudele ja isegi Tartu Ülikooli raamatukogule."

„Kõik on suurepärane, parim tudengiraamatukogu Eestis!"

Kokkuvõte

83,5% lugejate rahulolu-uuringus osalenutest olid TTÜ üliõpilased, kes käivad sageli raamatukogus õppimas, raamatuid laenamas ja teisi teenuseid kasutamas. Üliõpilased tulevad raamatukogusse ka loengutevahelist aega sisustama ja vaba aega veetma. 6,2% küsimustikule vastanutest olid TTÜ töötajad ja 10,3% lugejad väljastpoolt TTÜ-d.

Uuringu tulemused näitasid, et lugejad olid valdavalt rahul raamatukogu teenuste ja keskkonnaga. Lugejad peavad raamatukogu keskkonda mugavaks ja meeldivaks, hinnates ka huvitavat sisekujundust ja ilusaid vaateid akendest. Lugejate arvukad kommentaarid andsid võimaluse välja selgitada raamatukogu kasutamisega seotud probleeme ja leida neile lahendusi.

Lugejate rahulolu erialakirjanduse kättesaadavuse ja juurdepääsuga e-teavikutele oli kõrge. Ülikooli liikmeskonnale võimaldatakse juurdepääs raamatukogu andmebaasidele ka väljaspool ülikooli arvutivõrku. Elektrooniliste inforessursside ja trükiväljaannete hankimisel teeb raamatukogu koostööd ülikooli õppejõudude ja teaduritega. Arvestame ka üliõpilaste ettepanekuid vajalike õpikute tellimiseks raamatukogusse. Lugejatele meeldib õpikuid ja muud kirjandust raamatukogu avariiulitelt valida. Konkreetse raamatu asukohta saab täpsustada elektroonilise avakogu juhi abil. Teavikute ja info leidmisel on igal korrusel lugejaile abiks raamatukogutöötajad, kelle asjatundlikkust ja abivalmidust uuringus osalenud tunnustasid. Raamatukogu kõigil korrustel on arvutid ja tasuta WiFi, et kõik lugejad saaksid kasutada elektroonilisi inforessursse ja üliõpilased ka e-õppe võimalusi. Raamatukogu arvutitesse on paigaldatud tarkvara MS Office 2010. Lugejad saavad raamatukogus kasutamiseks laenata mitmeid arvuti lisaseadmeid, nagu kuvar, klaviatuur, arvutihiirt, numbriklaviatuur, skanner, ID-kaardi lugeja, elektroonikaseadmete laadija, kõrvaklapid. Pakume lugejatele IT-tuge kogu raamatukogu lahtiolekuaja.

Väga kõrgelt hindasid lugejauuringus osalenud raamatute laenutus- ja tagastusautomaadi kasutamise võimalust. Üle 40% raamatute laenutustest ja tagastustest vormistatakse automaadi abil. Printimisteenuse töökindluse tagamisel teeme koostööd teenusepakkujaga AS Overall. 2. korruse printer/koopiamasina viisime lugejauuringule järgneval kevadel avatud alast arvutiklassi, mille tulemusena elavnes arvutiklassi kasutamine ja avatud lugemisalas on nüüd vaiksem. Skaneerimistöökohtade juures parandasime valgustust. Vaegnägijate paremaks teenindamiseks paigutasime 2. korrusele seadmed trükitud ja audiomaterjalide lugemiseks ja kuulamiseks ning printeri materjalide Braille kirjas väljatrükiks.

Uuringu tulemused näitasid raamatukogu kui koha kasutamise võimalusi ja tähtsust lugejate jaoks. Üliõpilased kasutavad raamatukogu sageli õppimis- ja ajaveetmiskohana, mida soodustab mugav asukoht ülikoolilinnakus ja lihtne juurdepääs õppehoonetest. Erinevate lugejakohtade ja nende paigutusega korrustel on arvestatud lugejate eri vajadustega. Uuringus osalenute rahulolu lugejakohtadega, sealhulgas individuaal- ja rühmatööruumidega oli väga kõrge. 2013. aasta märtsis raamatukogus korraldatud kasutajakohtade hõivatuse uuring näitas, et lugeja- ja arvutitöökohtadest avatud lugemisalas puudust ei olnud. Lisatoole paigutasime rühma- ja individuaaltööruumidesse. Individuaaltööruume saab nüüd kasutada kahekesi töötamiseks. Tööruumide reserveerimine soovitud ajaks on mugav veebipõhise süsteemi kaudu, aga ka ruumi juures QR-koodi abil. Arvestades lugejate soove raamatukogu lahtiolekuaegade osas, oleme juba kahel suvel pakkunud võimalust külastada raamatukogu esmaspäeviti õhtupoolsel ajal.

Tulles tagasi artikli sissejuhatuses Brindley (2006) esitatud küsimuse juurde raamatukogu kui koha olulisusest lugejate jaoks ja raamatukogu atmosfääri mõjust pakutavale informatsioonile, võib öelda järgmist: kui raamatukogu teenused ja keskkond toetavad lugejate erinevaid vajadusi ning informatsioon on kiiresti ja lihtsalt leitav, siis lugejad usaldavad raamatukogu ning kasutavad tema teenuseid ka edaspidi.

Tänusõnad. Autor tänab raamatukogu lugejaid, kes leidsid aega rahulolu küsimustikule vastamiseks.

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Lisa

TTÜ Raamatukogu lugejate rahulolu uuring
19. november – 16. detsember 2012

Palume Teil osaleda TTÜ Raamatukogu uuringus, et saaksime teada Teie rahulolu raamatukogu teenuste ja keskkonnaga. Uuringu tulemusi kasutame teeninduse parendamiseks. Küsitlus on anonüümne, vastamine võtab aega 10-15 minutit.

1. Kui kaua Te olete olnud TTÜ Raamatukogu lugeja?

☐ Vähem kui aasta
☐ 1 aasta
☐ 2 aastat
☐ 3 aastat
☐ 4 ja enam aastat

2. Kui sageli Te külastate TTÜ Raamatukogu?

☐ Iga päev
☐ Mõni kord nädalas
☐ Mõni kord kuus
☐ Mõni kord aastas
☐ Ei külasta üldse

Kui ei külasta, siis miks?

3. Millisel eesmärgil Te külastate TTÜ Raamatukogu?

Märkige kõik sobivad vastused

☐ Infootsing
☐ Õppimine ja/või uurimistöö
☐ Raamatute laenamine või tagastamine
☐ Raamatute laenutähtaja pikendamine
☐ Uudiskirjanduse näitusega tutvumine
☐ Raamatukogu andmebaaside (EBSCO jt) kasutamine
☐ Raamatute lugemine / sirvimine
☐ Ajakirjade, ajalehtede lugemine
☐ Raamatukogu arvuti kasutamine
☐ WiFi kasutamine
☐ Printimine, kopeerimine, skaneerimine

☐ Nõu küsimine konsultandilt
☐ Vaba aja veetmine
☐ Ei külasta
☐ Muu (palun täpsustage):

4. Kui sageli Te külastate TTÜ Raamatukogu veebi?

☐ Iga päev
☐ Mõni kord nädalas
☐ Mõni kord kuus
☐ Mõni kord aastas
☐ Ei külasta üldse

Kui ei külasta, siis miks?

5. Mida vaatate/kasutate TTÜ Raamatukogu veebis?

Märkige kõik sobivad vastused

☐ Uudised ja sündmused
☐ Lahtiolekuajad
☐ E-kataloog ESTER
☐ Minu ESTER
☐ Raamatute laenutähtaegade pikendamine
☐ Eesti artiklite andmebaas ISE
☐ E-raamatute ja e-ajakirjade andmebaasid (EBSCO jt)
☐ Rühma- või individuaaltööruumi reserveerimine
☐ Infootsijuhendid
☐ Info küsimine (veebivorm, LibChat)
☐ Ei vaata/ei kasuta
☐ Muu (palun täpsustage):

6. Milliseid TTÜ Raamatukogu infoallikaid kasutate?

Märkige kõik sobivad vastused

☐ E-kataloog ESTER
☐ Eesti artiklite andmebaas ISE
☐ Avakogu juht
☐ Raamatud (paberil)
☐ E-raamatute andmebaasid
☐ Teadusajakirjad (paberil)
☐ E-ajakirjade andmebaasid

☐ Standardid / Standardite andmebaas

☐ Ehitusalane andmebaas ETF-Net (4. korrus)

☐ Raamatukogu infovoldikud

☐ Muu (palun täpsustage):

7. Kui rahul Te olete TTÜ Raamatukogu teenustega?

Märkige sobiv vastus igal real

	ei ole üldse rahul	osaliselt rahul	rahul	väga rahul	ei oska öelda
	1	2	3	4	0
Erialakirjanduse kättesaadavus	1	2	3	4	0
Juurdepääs e-teavikutele	1	2	3	4	0
Avakogu juht	1	2	3	4	0
Raamatukogude-vaheline laenutus (RVL)	1	2	3	4	0
Konsultandi abi	1	2	3	4	0
Printimine	1	2	3	4	0
Kopeerimine	1	2	3	4	0
Skaneerimine	1	2	3	4	0
Laenutusautomaat	1	2	3	4	0
Tagastusautomaat	1	2	3	4	0
Arvutite piisavus	1	2	3	4	0
Arvuti tarkvara	1	2	3	4	0
WiFi	1	2	3	4	0
Köitekoja teenused	1	2	3	4	0
Muu (palun täpsustage)	1	2	3	4	0

Millega Te ei ole rahul? Miks?

Teie ettepanekud:

8. Kui rahul Te olete töötingimuste ja -keskkonnaga TTÜ raamatukogus?

Märkige sobiv vastus igal real

	ei ole üldse rahul 1	osaliselt rahul 2	rahul 3	väga rahul 4	ei oska öelda 0
Lahtiolekuajad	1	2	3	4	0
Lugejakohad/ töökohad	1	2	3	4	0
Individuaaltöö-ruumid	1	2	3	4	0
Rühmatööruumid	1	2	3	4	0
Sildid ja viidad	1	2	3	4	0
Valgustus	1	2	3	4	0
Temperatuur	1	2	3	4	0
Vaikus	1	2	3	4	0
Puhtus	1	2	3	4	0

Millega Te ei ole rahul? Miks?

Teie ettepanekud:

9. Kus Te eelistate TTÜ Raamatukogus õppida või aega veeta?

Märkige kõik sobivad vastused

☐ 2. korrus

☐ 3. korrus

☐ 4. korrus

☐ 5. korrus

☐ Individuaaltööruum

☐ Rühmatööruum

☐ Ei ole eelistust

Palun põhjendage oma eelistusi:

10. Millistel korrustel peaks Teie arvates olema rohkem arvuteid?

Märkige kõik sobivad vastused

☐ 2. korrus

☐ 3. korrus

☐ 4. korrus

☐ 5. korrus

☐ Arvuteid on piisavalt

☐ Ei oska öelda

11. Millisel eesmärgil Te olete kasutanud TTÜ Raamatukogu arvuteid?

Märkige kõik sobivad vastused

☐ Infootsing

☐ Õppe- või uurimistöö

☐ Printimine

☐ Meelelahutus ja ajaviide

☐ Ei ole kasutanud

☐ Muu (palun täpsustage)

12. Kas TTÜ Raamatukogu on koht, kus oma vaba aega sisustada?

☐ Jah

Miks?

☐ Ei

Miks?

13. Kas Teil on veel ettepanekuid, kuidas TTÜ Raamatukogu saaks Teid paremini teenindada?

Te olete

☐ TTÜ bakalaureuseõppe üliõpilane

☐ TTÜ inseneriõppe üliõpilane

☐ TTÜ rakenduskõrgharidusõppe üliõpilane

☐ TTÜ magistrant

☐ TTÜ doktorant

☐ TTÜ õppejõud/teadur

☐ Väljastpoolt TTÜd

☐ Muu (palun täpsustage):

Teie teaduskond/ kool/ asutus

☐ TTÜ ehitusteaduskond
☐ TTÜ energeetikateaduskond
☐ TTÜ infotehnoloogia teaduskond
☐ TTÜ keemia- ja materjalitehnoloogia teaduskond
☐ TTÜ majandusteaduskond
☐ TTÜ matemaatika-loodusteaduskond
☐ TTÜ mehaanikateaduskond
☐ TTÜ sotsiaalteaduskond
☐ Muu (palun täpsustage):

TÄNAME VASTAMAST!

THE USER SATISFACTION SURVEY OF THE TALLINN UNIVERSITY OF TECHNOLOGY LIBRARY IN 2012

Aiki Tibar

TUT Library, Head of Research and Development Division

Summary

The new building of the Tallinn University of Technology (TUT) Library was opened to the public in the university campus in September 2009. There are 500 reading seats, including about 100 computer workplaces, on the four floors of the library, 26 individual and 8 group study rooms. Technical facilities of the library include self check-out and self check-in machines, print/copy devices and scanners. WiFi is available everywhere at the library. The library web site enables to use online catalogue, e-resources, various services, guidelines for searching information, etc.

During 19.11-16.12.2012 a user satisfaction survey was conducted to find out how users evaluated library services and various aspects of the library´s environment. Data were collected through a web questionnaire, and a paper form as well. Altogether 291 users filled out a questionnaire. 83.5% of the respondents were TUT students of bachelor, master and doctoral level, 6.2% TUT staff and 10.3% were users outside the university.

The survey results show that 56% of the respondents visited the library a couple of times in a week, 25% some times in a month, 10% daily and 8% some times in a year. Users come to the library to study and borrow/return books (both activities where marked by 90% of the respondents), print/copy/scan materials (52%), read/browse books (51%), search information (49%), use WiFi (44%) and computers (42%), spend their leisure time (31%), etc. The mostly used library´s information resources were online catalogue ESTER (93% of the respondents) and printed books (69%). Databases of e-books and databases of e-journals were used by 22% and 20% accordingly.

Users often prefer a particular place or an area of the library for studying or spending their leisure time. Respondents commented that the choice of the place may be influenced by factors, such as ease of access, location of needed books, suitable reading seats and computers, good WiFi, quiet environment, good lighting, and also nice surroundings and views. 95% of the respondents were satisfied or very satisfied with reading seats, 91% with group study rooms and 90% with individual study rooms. Many respondents evaluated the library space as pleasant and quiet for learning and concentration. 74% of the respondents were satisfied or very satisfied

with quietness in the library. Some respondents complained about users who talked to each other or on mobile phone very loudly in the reading area.

88% of the respondents were satisfied or very satisfied with availability of professional literature. Users like open shelves where they can choose textbooks or monographs themselves. Some respondents named areas where additional literature is needed. 90% of the respondents were satisfied or very satisfied with access to e-books, e-journals and databases. Some respondents suggested increasing access to electronic resources and making more guidelines about their availability and usage. 94% of the respondents were satisfied or very satisfied with the assistance of librarians.

Self check-out and self check-in machines were evaluated very highly (satisfied or very satisfied were accordingly 98% and 94% of the respondents). 76% of the respondents were satisfied or very satisfied with computer software and 73% with WiFi. During the survey new software MS Office 2010 was installed. Just before the survey WiFi transmission at the university was also improved.

87% of the respondents were satisfied or very satisfied with scanning, 82% with copying and 80% with printing. 77% of the respondents were satisfied or very satisfied with opening hours of the library. Some users, mostly students wanted longer opening hours on weekdays and weekend.

Several improvements have been made at the library during and after the study: reliability of printing service is improved in co-operation with the service provider Overall Eesti Ltd.; the 2nd floor print/copy device was moved into computer class to ensure quietness at the reading area; a computer was placed into each group study room; IT support is avalable during opening hours of the library; extra chair was placed into each individual study room (possibility to work in pairs); lighting was improved at scanning devices; various user training sessions for users were organized in addition to a study plan; changes were made in summer opening hours.

TTÜ ÕPPEJÕUDUDE JA TEADURITE INFOVAJADUSTE JA INFOOTSIKÄITUMISE UURING 2014

Aiki Tibar

TTÜ Raamatukogu teadus- ja arendustalituse juhataja

Sissejuhatus

Õppejõud ja teadurid moodustavad ülikooliraamatukogu kasutajate seas olulise sihtrühma, kes on raamatukogule ka partneriks teenuste ja kogude arendamisel. Õppejõudude ja teadurite infokäitumise uurimine pakub teavet õppe- ja teadustööks vajalikest infoallikatest ja probleemidest info hankimisel ning annab raamatukogule konkreetsemaid juhiseid akadeemilise kogukonna infovajaduste rahuldamiseks. 2014. aastal TTÜ Raamatukogu korraldatud õppejõudude ja teadurite küsitluse ettevalmistamisel ja läbiviimisel arvestati 2004. aastal korraldatud sarnase küsitluse kogemusega (Tibar 2005, 2006). Mitmed küsimused on mõlema aasta küsimustikus sarnased. Tulenevalt muutunud infokeskkonnast muudeti 2014. aasta küsimustikus mõne küsimuse vastusevariante, lisati uusi küsimusi ja jäeti ära mittevajalikud. Seega on teatud küsimuste osas võimalik võrrelda kahe uuringu tulemusi ja näha muutusi kümne aasta möödudes.

Uuringu eesmärgiks oli välja selgitada õppejõudude ja teadurite infootsikäitumise eri aspekte, nende hinnanguid infoallikate kasulikkuse ja infootsivõimaluste arengu kohta, probleeme informatsiooni hankimisel, kriteeriume infoallikate valimisel, koostöö vorme ja infovahetust teiste teadlaste ja spetsialistidega, teadustöö tulemuste eelistatumaid avaldamiskohti jne. Käesolevas artiklis käsitletakse uuringu tulemusi, mis näitavad õppejõudude ja teadurite hinnanguid erinevate infoallikate kasulikkuse ja infootsivõimaluste arengu kohta, probleeme informatsiooni hankimisel ja osalemist raamatukogu koolitustel.

Suundumusi õppejõudude ja teadurite infootsikäitumises uuringute põhjal

Elektrooniliste inforessursside areng ja kättesaadavus on oluliselt mõjutanud informatsiooni hankimise ja kasutamise võimalusi. Brown (2010) analüüsib uuringuid digitaalse infrastruktuuri mõjust teaduskommunikatsioonile ja järeldab, et vaba juurdepääsuga ajakirjade artiklid, konverentside ettekanded ja andmed digihoidlates laiendavad teadustöö nähtavust ja kasutamist, võimaldades nende materjalide

kättesaadavust ajast ja kohast olenemata. Brown rõhutab, et need materjalid siiski ei asenda eelretsenseeritavaid ajakirjaartikleid.

Engel'i jt (2011) uuring näitas, et tehnikateadlaste hinnangul olid uurimistöö jaoks kaks kõige tähtsamat infoallikat teadusajakirjad ja internetiressursid ning seejärel vestlused kolleegidega. Vastava valdkonna arengu jälgimise eesmärgil pidasid teadlased oluliseks osaleda konverentsidel, tutvuda uute ajakirjanumbritega ja jälgida viiteid artiklites. 47% uuringus osalenutest pidas väga tähtsaks või tähtsaks raamatukogutöötajate abi vajaliku info hankimisel.

Ülikooliraamatukogu rolli informatsiooni vahendamisel väärtustasid kõrgelt õppejõud ja teadurid, kes osalesid 2011. aastal Ühendkuningriigi ülikoolide uuringus (Tenopir, 2014). Tulemused näitasid, et 67% õppejõudude ja teadurite loetud artiklitest on saadud ülikooli raamatukogu vahendusel; teised allikad moodustasid oluliselt väiksema osa, nagu veebis vaba juurdepääsuga ajakirjad – 9%, isiklikult ja instituudi poolt tellitud ajakirjad – mõlemad 5% jne.

Niu ja Hemminger'i (2012) uuringu tulemused Ameerika Ühendriikide viies ülikoolis näitasid, et õppejõud ja teadurid eelistasid trükiallikatele elektroonilisi, sealjuures kasutati nii raamatukogu tellitud kui ka vaba juurdepääsuga e-ajakirju. Samas, kui informatsiooni eelistati otsida valdavalt elektrooniliselt, siis lugemiseks valiti nii elektroonilisi kui ka trükitud allikaid.

E-raamatute kasutamist teadus- ja õppetöös on uuringute andmetel mõjutanud sobivate nimetuste lisandumine huvipakkuvates valdkondades. Mitme aasta e-raamatute kasutamise andmed ülikoolide uuringute põhjal (näiteks Herlihy ja Yi, 2012; Lamothe, 2012) näitavad, et e-raamatute kogu kasvades suureneb ka nende kasutamine ja mida rohkem tehakse otsinguid, seda enam vaadatakse täistekste.

2012. aasta Ameerika Ühendriikide ja Ühendkuningriigi ülikoolide ja kolledžite õppejõudude ja teadurite küsitluste põhjal toodi välja järgmisi olulisi tulemusi informatsiooni hankimisel (Housewright jt, 2013a; Housewright jt, 2013b): jätkub interneti otsimootorite tähtsuse suurenemine teadusressursside leidmise hõlbustamiseks; konverentsidel osalemist hinnatakse endiselt oluliseks nii uute uurimissuundade avastamise kui ka kontaktide loomisel eesmärgil; monograafiate e-versioone kasutatakse enamasti sisuga tutvumiseks, süvalugemiseks eelistab enamus vastajaid trükitud raamatuid; raamatukogu rolli hinnatakse väga tähtsaks artiklite ja raamatute hankimisel õppe- ja teadustöö jaoks; kui raamatukogu kogudest vajalikku ei leita, siis otsitakse enamasti vabalt kättesaadavaid materjale veebis.

TTÜ Raamatukogu uuringu läbiviimine ja vastanute taustaandmed

2014. aasta küsitluse sihtrühmaks oli 827 TTÜ õppejõudu ja teadurit, nende seas 65 välisõppejõudu ja –teadurit. Viimased said vastata ingliskeelsele küsimustikule. Õppejõudude ja teadurite kaasamiseks saatsime neile e-kirjad koos selgitusega uuringu kohta ja lingiga veebiküsimustiku juurde. Põhiküsitlus toimus 24.04.-23.05 ja kordusküsitlus 28.05-27.06. Küsimustikule vastas 145 õppejõudu ja teadurit, nendest eestikeelsele 130 ja ingliskeelsele 15. Seega vastanute protsent eestikeelsele küsimustikule oli 17,1, ingliskeelsele 23,1 ja kokku 17,5. Vastanute jagunemine teaduskondade ja asutuste kaupa on toodud tabelis 1.

Tabel 1. Vastanute jagunemine teaduskondade ja asutuste kaupa

Teaduskond/asutus	Vastanud eestikeelsele küsimustikule	Vastanud ingliskeelsele küsimustikule	Kokku	%
Infotehnoloogia teaduskond	21	1	22	15,2
Matemaatika-loodusteaduskond	18	1	19	13,1
Ehitusteaduskond	17	1	18	12,4
Mehaanikateaduskond	16	1	17	11,7
Keemia- ja materjalitehnoloogia teaduskond	13		13	9,0
Majandusteaduskond	11	2	13	9,0
Energeetikateaduskond	9		9	6,2
Sotsiaalteaduskond	7	2	9	6,2
TTÜ Küberneetika Instituut	3	3	6	4,1
TTÜ Tehnomeedikum	4	1	5	3,4
TTÜ Tartu Kolledž	3	1	4	2,8
TTÜ Meresüsteemide Instituut	2	1	3	2,1
TTÜ Kuressaare Kolledž	2		2	1,4
TTÜ Virumaa Kolledž	2		2	1,4
TTÜ Geoloogia Instituut	1	1	2	1,4
TTÜ Tallinna Kolledž	1		1	0,7
Kokku	**130**	**15**	**145**	**100**

Vastanutest olid 66,2% mehed ja 33,8% naised. Vanuse järgi jagunesid vastanud järgmiselt: alla 30-aastased 13,1%, 30–39-aastased 33,8%, 40–49-aastased 17,2%, 50–59-aastased 17,2% ja üle 60-aastased 18,6%. Vastanute jagunemine ametikoha järgi on toodud tabelis 2.

Tabel 2. Vastanute jagunemine ametikoha järgi

Ametikoht	Arv	%
vanemteadur	31	21,4
professor	30	20,7
dotsent	23	15,8
lektor	22	15,2
teadur	14	9,6
nooremteadur	11	7,6
assistent	9	6,2
juhtivteadur	3	2,1
muu	2	1,4
Kokku	**145**	**100**

Hinnanguid infoallikate kasulikkusele

Palusime õppejõududel ja teaduritel hinnata, kui kasulikuks nad peavad erinevaid infoallikaid kahel otstarbel: selleks et kursis olla uue info/uute arengutega ja lahendada konkreetseid probleeme/küsimusi. Kasulikkuse hinnanguid küsisime skaalal *ei ole üldse kasulik, mitte eriti kasulik, kasulik* ja *väga kasulik*. Vastanute hinnangud on toodud tabelis 3. Võrdluseks on lisatud 2004. aasta uuringu tulemusi (2004. aastal vastas TTÜ Raamatukogu küsimustikule 198 õppejõudu ja teadurit).

2004. aasta uuringus osalenute hinnangul olid uue info jooksva jälgimise eesmärgil kolm kõige kasulikumat infoallikat trükitud ajakirjad (85,4% vastanutest andsid hinnangu *kasulik* või *väga kasulik*), internet üldiselt ja e-ajakirjad (mõlemad 81,1%) ning konkreetsete probleemide/küsimuste lahendamise eesmärgil raamatud (87,1% vastanutest andsid hinnangu *kasulik* või *väga kasulik*), internet üldiselt (82,6%) ja trükitud ajakirjad (82,2%). Viimase kümne aasta jooksul on oluliselt laienenud juurdepääs ajakirjade elektroonilistele versioonidele ja TTÜ Raamatukogu on vähendanud tellimusi trükitud ajakirjade nimetustele. Sellest tulenevalt loobusime 2014. aasta küsimustikus ajakirjade kasulikkuse hindamisel vastusevariandist „trükitud ajakirjad". 2014. aasta uuringu tulemuste põhjal on uue info jooksva jälgimise eesmärgil kolm kõige kasulikumat infoallikat interneti otsimootorid (97,9% vastanutest andsid hinnangu *kasulik* või *väga kasulik*), internet üldiselt (97,2%) ja e-ajakirjad (90,3%) ning konkreetsete probleemide/küsimuste lahendamise eesmärgil interneti otsimootorid (95,8%), internet üldiselt (93,8%) ja kolleegid ülikooli samas teaduskonnas/instituudis (88,2%).

Tabel 3. Infoallikate kasulikkus 2014. ja 2004. aasta uuringu tulemuste põhjal (protsendid sisaldavad hinnangute *kasulik* ja *väga kasulik* summat)

	2014		2004	
	Uue info jooksev jälgimine	Konkreetsete probleemide/ küsimuste lahendamine	Uue info jooksev jälgimine	Konkreetsete probleemide/ küsimuste lahendamine
Interneti otsimootorid	**97,9**	**95,8**	80,9	81,9
Internet üldiselt	**97,2**	**93,8**	**81,1**	**82,6**
E-ajakirjad	**90,3**	85,4	**81,1**	76,1
Osalemine konverentsidel/seminaridel	87,6	67,4	75,3	65,0
Kolleegid ülikooli samas teaduskonnas/ instituudis	86,9	**88,2**	71,6	77,2
Viited publikatsioonides	86,9	75,7	60,7	69,0
Teadlased/spetsialistid väljastpoolt ülikooli samas teadusvaldkonnas	80,0	76,4	62,6	63,8
Ajakirjad	80,0	68,1	-	-
Trükitud ajakirjad	-	-	**85,4**	**82,2**
Konverentsimaterjalid	79,3	65,3	70,5	59,1
Täistekstiandmebaasid	-	-	66,7	69,4
Raamatud	76,6	80,6	63,9	**87,1**
E-raamatud	74,5	70,1	-	-
Raamatukogude kataloogid	73,8	55,6	43,9	57,0
Avatud juurdepääsuga repositooriumid	70,3	58,3	-	-
Uurimistööde aruanded	69,0	67,4	40,8	51,6
Kolleegid ülikooli teistes teaduskondades/instituutides	65,5	66,7	33,9	40,0
Viite-, referaat- ja faktiandmebaasid	58,6	46,5	33,6	34,1
Teadlased/spetsialistid väljastpoolt ülikooli teistes teadusvaldkondades	44,1	46,5	28,9	30,6
Internetifoorumid/ postiloendid	39,3	38,9	25,4	23,0
Preprindid	39,0	36,1	27,7	27,2
Patendiinfo	31,7	23,6	14,1	18,7
Sotsiaalmeedia kanalid	23,6	17,4	-	-

2004. ja 2014. aasta uuringu tulemuste võrdlemisel on näha, et kui 2004. aastal pidasid vastanud interneti otsimootoreid ja internetti mõnevõrra kasulikumaks konkreetsete probleemide/küsimuste lahendamiseks, siis 2014. aastal on kasulikkuse hinnangud samadele allikatele kõrgemad uue info jooksva jälgimise eesmärgil. Sarnast muutust infoallikate kasulikkuse hinnangutes kahte info hankimise otstarvet arvestades võib täheldada ka järgmiste allikate puhul: viited publikatsioonides, raamatukogude kataloogid, uurimistööde aruanded, viite-, referaat- ja faktiandmebaasid ning patendiinfo.

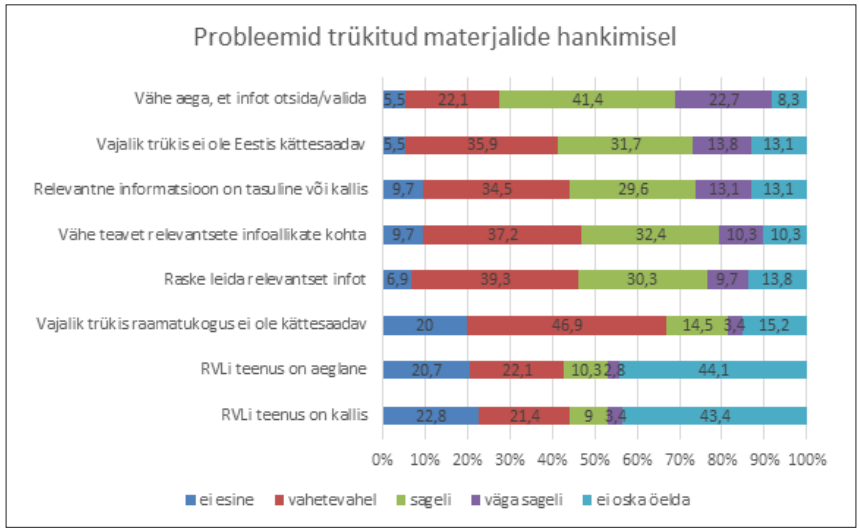
Küsisime õppejõududelt ja teadureilt, milliseid otsimootoreid ja andmebaase nad kasutavad kõige sagedamini. Kõige enam on vastajad nimetanud Google (43 vastajat), ScienceDirect (36), Google Scholar (34), IEEE Xplore (25), Scopus (22), Web of Science (20) jne. Mõned vastajad kommenteerisid andmebaaside kasutamist üldisemalt, näiteks: „vastavalt vajadusele, peamiselt piisab TTÜR kaudu ligipääsetavatest andmebaasidest" või „raamatukogu ainevaldkonna andmebaasid".

Palusime vastajatel nimetada, millistele andmebaasidele (e-ajakirjad, e-raamatud, muud dokumendid) peaks TTÜ Raamatukogu lisaks olemasolevatele hankima ligipääsu. Vastajad nimetasid mitut andmebaasi ja e-ajakirja, nende seas ka nimetusi, millele raamatukogu kaudu juba ongi ligipääs hangitud. Uue võimalusena saavad mehaanika valdkonna õppejõud ja teadurid peagi kasutada andmebaasi *ASME (American Society of Mechanical Engineers) Digital Collection*.

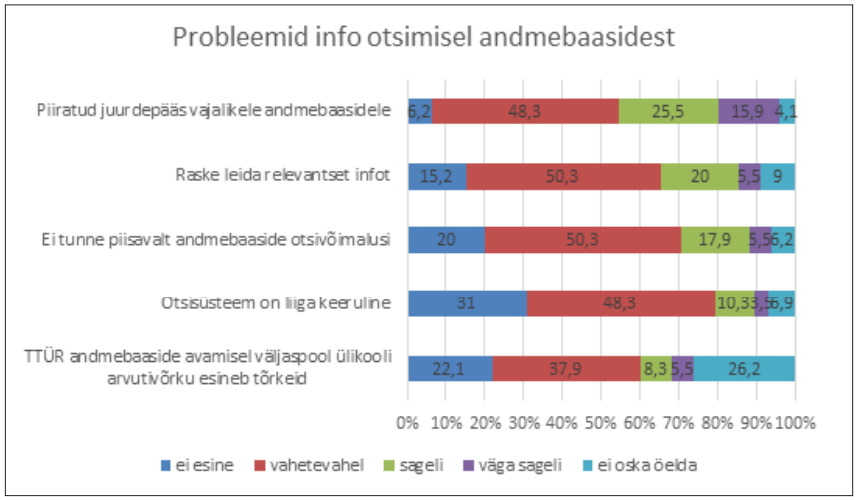
Probleemid informatsiooni hankimisel

Küsisime õppejõududelt ja teaduritelt, milliseid probleeme esineb neil trükitud materjalide hankimisel ja informatsiooni otsimisel andmebaasidest (e-ajakirjad, e-raamatud jm). Probleemide esinemissagedust said vastajad märkida skaalal *ei esine, vahetevahel, sageli, väga sageli, ei oska öelda*. Joonisel 1 on toodud tulemused probleemide esinemissageduse kohta trükitud materjalide hankimisel ja joonisel 2 informatsiooni otsimisel andmebaasidest.

Probleemide esinemissagedust trükitud materjalide hankimisel koos samade vastusevariantidega küsisime õppejõududelt ja teaduritelt ka 2004. aasta uuringus (Tibar, 2005). Kahe uuringu tulemuste võrdlemisel on näha, et 2014. aastal on vastajad peaaegu kõikide probleemide esinemist hinnangute *sageli* ja *väga sageli* järgi märkinud vähem. Ainult kahe vastusevariandi puhul on samu hinnanguid arvestades probleemide esinemist märgitud samal tasemel – need on „vähe aega, et infot otsida/valida" ja „raske leida spetsiifilist või relevantset infot".



Joonis 1. Probleemid trükitud materjalide hankimisel (%)

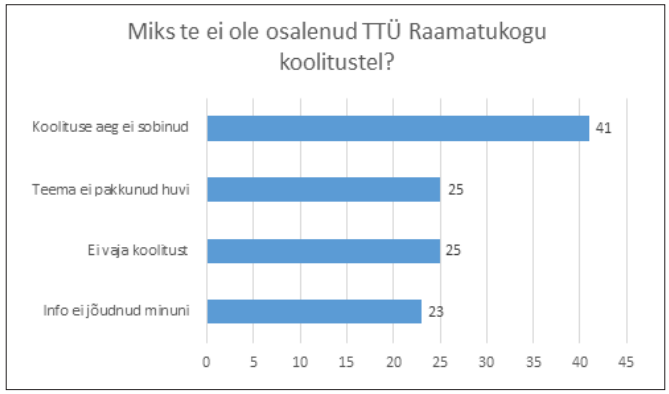


Joonis 2. Probleemid informatsiooni otsimisel andmebaasidest (%)

Uuringu tulemused vastajate probleemidest informatsiooni hankimisel näitavad, et teatud probleemide lahendamisel saavad abiks olla raamatukogu spetsialistid. Nimelt, abistades vajaliku teaviku hankimisel või info leidmisel infovajajatega individuaalselt suheldes või tutvustades andmebaaside võimalusi ja kasutamist koolituste kaudu. Raamatukogus toimuvad koolitused nii eesti kui inglise keeles, viimased enamasti välisekspertide juhendamisel.

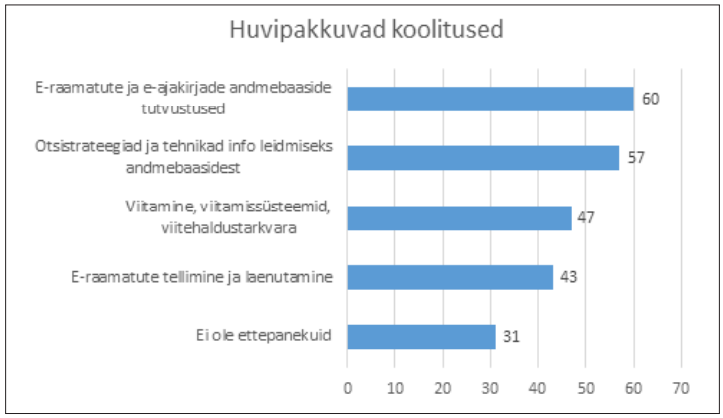
TTÜ Raamatukogu koolitustel osalemine

Küsimusele „Kas olete osalenud mõnel TTÜ Raamatukogu koolitusel?“ vastas „jah“ 29% ja „ei“ 71% vastanutest. Vastajatel, kes ei ole osalenud raamatukogu koolitustel, palusime põhjuse täpsustada. Vastajad said valida mitu vastusevarianti (joonis 3). Kõige enam on valitud vastusevarianti „koolituse aeg ei sobinud“ (41 vastajat), seejärel „teema ei pakkunud huvi“ ja „ei vaja koolitust“ (mõlemad 25) ning „info ei jõudnud minuni“ (23).



Joonis 3. Miks te ei ole osalenud TTÜ Raamatukogu koolitustel? (vastajate arv)

Mõned vastajad märkisid omapoolse põhjenduse koolitustel mitteosalemise kohta, nagu ajapuudus või „saan ise hakkama“. Üks ingliskeelsele küsimustikule vastaja kirjutas, et enamus raamatukogu koolitusi on eesti keeles ja pealegi vajab ta spetsiifilist informatsiooni. Veel märkis üks vastaja, et on raamatukoguga väga rahul ja leiab kõik vajaliku.



Joonis 4. Milliseid koolitusi võiks TTÜ Raamatukogu edaspidi õppejõududele ja teaduritele korraldada? (vastajate arv)

Tundsime huvi, milliseid koolitusi võiks TTÜ Raamatukogu edaspidi õppejõududele ja teaduritele korraldada. Vastajad said valida mitu etteantud teemat (joonis 4).

Tulemused näitavad, et paljudel vastajatel on huvi raamatukogu erinevate koolituste vastu. Nimetatud teemadel on raamatukogu teinud koolitusi kogu õppeaasta jooksul ning teavitanud nendest ka õppejõude ja teadureid. Alati aga ei õnnestu leida kõigile huvilistele koolituseks sobiv aeg.

Infootsivõimaluste oodatavad arengud

Küsimusele „Kui tähtsad on Teie jaoks järgmised muutused või arengud lähematel aastatel?" vastamisel palusime hinnanguid skaalal *ei ole tähtis, vähetähtis, tähtis, väga tähtis, ei oska öelda*.

Vastajate hinnanguid 2014. ja 2004. aasta uuringu tulemuste põhjal on toodud tabelis 4.

Tabel 4. Oodatavad infootsivõimalused lähematel aastatel 2014. ja 2004. aasta uuringu tulemuste põhjal (protsendid sisaldavad hinnangute *tähtis* ja *väga tähtis* summat)

	2014	2004
Ka teadusajakirjade vanemad aastakäigud on elektrooniliselt ligipääsetavad	92,3	81,5
Raamatukogude vahendusel kättesaadavate andmebaaside valik on suurenenud	92,0	85,1
Täiustatud otsimootorid, mis võimaldavad teha efektiivsemaid otsinguid	92,0	85,1
Artiklid jt materjalid on kättesaadavad vaba juurdepääsuga ajakirjades ja digihoidlates	87,3	-
Eesti raamatukogude elektroonilised inforessursid on kättesaadavad ühisportaali kaudu	86,7	84,9
Varasemate trükiste digiteerimine	84,8	-
Teadusajakirjad on kättesaadavad ainult elektrooniliselt	75,9	49,7
Raamatukogudes jätkub trükiste kogude arendamine	71,3	82,9
Teadusajakirjad on kättesaadavad paralleelselt nii trükitud kujul kui ka elektrooniliselt	51,1	82,6

2014. aasta uuringus osalenute hinnangul on väga olulised kõik arengud, mis võimaldavad elektroonilist juurdepääsu informatsioonile. 2004. ja 2014 aasta uuringu tulemuste põhjal on näha, kuidas on muutunud õppejõudude ja teadurite ootused infootsivõimaluste osas. Kui 2004. aastal pidasid uuringus osalenud küllalt oluliseks ka trükiste kogude arendamist raamatukogudes ja trükitud ajakirjade kättesaadavust paralleelselt elektroonilise versiooniga, siis kümme aastat hiljem on viimati nimetatud arengute tähtsus vastajate jaoks mõnevõrra vähenenud. Võrreldes 2004. aasta tulemustega on 2014. aastal oluliselt suurenenud nende vastajate arv, kelle arvates võiksid teadusajakirjad olla kättesaadavad ainult elektrooniliselt.

TTÜ Raamatukogu on nimetatud suundumusi juba arvestanud. Ülikoolile vajalike andmebaaside ja raamatute hankimisel teeb raamatukogu järjepidevat koostööd õppejõudude ja teaduritega. Mitme trükitud ajakirja tellimisest raamatukogusse on loobutud, kui vastavatele nimetustele on hangitud elektrooniline juurdepääs. Pidevalt areneb ja täieneb TTÜ Raamatukogu digikogu, mis pakub veebipõhist ligipääsu ülikooli doktori-, magistri-, diplomi- ja bakalaureusetööde, aga ka õpikute ja õppematerjalide e-versioonidele ning Tehnikaülikooli ajalooga seotud publikatsioonidele. TTÜ Raamatukogu digikogu on ühendatud digitaalse kultuuripärandi portaaliga Digiveeb ja vaba juurdepääsuga digihoidlaga OpenDOAR.

Kokkuvõtteks

TTÜ Raamatukogu uuringus osalenute arv jäi oodatust väiksemaks, seepärast ei ole võimalik küsitluse tulemuste põhjal teha üldistusi kogu ülikooli õppejõudude ja teadurite infootsikäitumise kohta. Kuna käesoleva uuringu tulemustes võib täheldada mitmeid sarnasusi teiste ülikoolide õppejõudude ja teadurite infootsikäitumise uuringute tulemustega, siis ei ole situatsioon TTÜ-s unikaalne. Uuringu tulemused näitavad teatud suundumusi informatsiooni hankimisel ja mõningaid tulemusi saab 2004. ja 2014. aasta raamatukogu uuringute põhjal võrrelda. Edasises andmeanalüüsis keskendutakse täiendavatele tulemustele, mida käesolevas artiklis ei ole käsitletud. Küsitluse andmestiku täiendamiseks ja infokäitumise süvenenumaks uurimiseks viime õppejõudude ja teaduritega läbi ka kümmekond intervjuud. Intervjueerimise teel kogutud andmestikule toetudes on võimalik selgitada mitmeid küsitluse tulemusi ja lisada viimastele usaldusväärsust.

Tänusõnad. Autor tänab küsimustikule vastajaid nende panuse eest uuringusse.

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THE STUDY ON INFORMATION NEEDS AND INFORMATION-SEEKING BEHAVIOUR OF ACADEMIC STAFF AT TALLINN UNIVERSITY OF TECHNOLOGY IN 2014

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Summary

In 2014 Tallinn University of Technology Library conducted a study on information needs and information-seeking behaviour of academic staff of the university. The aim of the study was to find out various aspects of information behaviour of academic staff, such as assessments on usefulness of information sources and developments for information seeking possibilities, problems in information seeking, criteria for the selection of information sources, forms of collaboration and information exchange with ohter researchers/specialists, preferred forums for publishing research results, etc.

Data were gathered through a web questionnaire. Lecturers and researchers received information about the study and a link to the web questionnaire by e-mail. The sample comprised of 827 lecturers and researchers from eight faculties and eight institutions. The number of respondents was 145 and response rate 17.5%. The majority of respondents were from the faculty of information technology (15.2%), followed by the faculty of science (13.1%), civil engineering (12.4%) and mechanical engineering (11.7%). Division by age of the respondents was as follows: under 30 – 13.1%; 30–39-years old – 33.8%; 40–49 – 17.2%; 50–59 – 17.2% and over 60 – 18.6%. Division by academic position of the respondents was as follows: senior research scientists – 21.4%; professors – 20.7%; associate professors – 15.8%; lecturers – 15.2%; research scientists – 9.6%; early stage researchers – 7.6%; assistants – 6.2%; lead research scientists – 2.1%; other – 1.4%.

Data analysis is yet to be finished, therefore the article presents only a part of the results, such as assessments on usefulness of information sources and developments for information seeking possibilities, problems in information seeking, and attendance at user training seminars of the library. Respondents were asked to assess usefulness of information sources for two purposes – first, to keep abreast of new developments and second, to solve specific problems. According to the study results, the three most useful sources for keeping abreast of new developments were web search engines (97.9% of the respondents considered these *useful* or v*ery useful*), web in general (97.2%), and e-journals (90.3%); the three most useful sources for solving

specific problems were web search engines (95.8%), web in general (93.8%) and colleagues within the same faculty/institution at the university (88.2%).

Respondents were asked how often they face various problems when seeking printed sources and with searching information from databases. The most common problems faced by respondents when seeking printed sources were lack of time to search/select information (64.1% of respondents answered *often* or *very often*); needed publication is not available in Estonia (45.5%); relevant information is for fee and insufficient knowledge on relevant sources (both 42.7%). In case of searching information in databases respondents faced most problems regarding restricted access to databases (41.4% of respondents answered *often* or *very often*); it is difficult to find relevant information (25.5%) and insufficient knowledge on search options in databases (23.4%).

The question „Have you attended any user training seminar/session of Tallinn University of Technology Library?" was answered as follows: yes 29% and no 71% of the respondents. Some of the respondents who answered no, specified a reason by choosing following options: the time was not suitable (41); the topic was irrelevant (25); I do not need training (25); I had no information about the training (23).

Respondents were asked what kind of training seminars for lecturers and researchers should the TUT Library arrange in the future. Respondents could choose various topics: 60 respondents were interested in introduction to databases of e-books and e-journals; 57 in search strategies and techniques to find information in databases; 47 in systems for citing references and reference management software; 43 in acquisition and lending of e-books.

The question „How important are the following developments for you during the next few years?" was answered as follows (percentage includes assessments *important* and *very important*):

- Online access to older volumes of scientific journals (92.3%);
- Increasing access to full-text databases via libraries (92%);
- Technological advancements in search engines to have more effective searches (92%);
- Research articles and other material are available in open access journals and repositories (87.3%);
- Electronic information resources of Estonian libraries are accessible via joint website (86.7%);
- Digitization of printed works (84.8%);
- Scientific journals are available only in electronic form (75.9);
- Maintaining the quality of print collection in libraries (71.3%);
- Scientific journals are equally available in printed and electronic form (51.1%).

Additional data will be gathered from about ten interviews with lecturers and researchers to complement questionnaire data and study further their information behaviour. Interview data can explain some questionnaire results and add reliability to the latter.