Information Literacy of Non-medical Students of First Faculty of Medicine of Charles University in Prague

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Summary:

This survey of information literacy of undergraduate non-medical students at the First Faculty of Medicine of Charles University in Prague was conducted in October and November, 2013. The study examines the ways the students look for information, the types of resources they prefer, how they evaluate their actual abilities and knowledge when looking for scientific information, how they perceive information literacy classes at the First Faculty of Medicine, and the kinds of superstructure services, offered by the Faculty's Institute of Scientific Information as well as by the General University Hospital in Prague, they choose to use. Our research compares the individual responses of newly admitted students, who have not taken their first year course, *Introduction to Scientific Research*, with the second and third year students who have completed the course.

Keywords: non-medical fields, information literacy, scientific information, library services, library users, information retrieval, information specialist, social sites, quantitative research

Introduction

The American Association of Librarians defines information literacy as the ability "to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."[1] In 1974, Paul Zurkovski produced the first definition of information literacy; in his opinion, an information literate individual is "ready to use information sources for their work, having learnt to use a broad range of techniques and tools, as well as primary sources for problem-solving."[2] The definition has since been modified, amended and supplemented. At present, we identify with the claim of Christine Bruce,[3] who argues that an information literate person "engages in independent and targeted learning, using information processes, information technologies and systems; he is well-versed in the world of information, has his own information style and personal values that support the spreading of information, and thinks critically." The term is a part of a broader definition of computer literacy, which is "a complex of attitudes, understandings and skills needed for information seeking, communication, and effective use of

[1] American Library Association. *Presidential Committee on Information Literacy: Final Report* [online]. Washington: ALA, 1989 [cit. 2014-08-10]. Available from: http://www.pla.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cMF

[2] BEHRENS, Shirley J. A conceptual analysis and historical overview of information literacy. *College & Research Libraries.* 1994, **35**(4), pp. 309–322. ISSN 0010-0870.

[3] BRUCE, Christine S. Portrait of an information literate person. *HERDSA News.* 1994, **16**(3), 9–11. ISSN 0157-1826. BRUCE, Christine S. *The seven faces of information literacy.* Adelaide: Auslib Press, 1997. 203 p. ISBN 1-875145-43-5.

information in different media and formats."[4] However, the term was defined as late as in the 1980s, and, unlike "information literacy," which is predominantly used in libraries and on different levels of colleges and high schools, "computer literacy" is mostly used by the ICT[5] community at large.

Research of information literacy gauges a whole range of the individual aspects of information behavior in different disciplines.[6] Survey results focusing on doctors or medical students have been published both in Czech and in international literature.[7] More full-scale surveys of information literacy as regards non-medical disciplines (study programs at schools of medicine that do not concern general medicine and dentistry) are largely conducted within specialized healthcare fields, such as nursing and health caring,[8] or, as the case may be, physical therapy. Other non-medical disciplines, such as addictology (chemical dependency), ergotherapy (occupational therapy), nutritional therapy, and healthcare technology have a relatively low profile worldwide. However, there has been no Czech survey of information literacy as regards non-medical fields. No relevant studies were conducted at the First Faculty of Medicine of Charles University prior to 2013. In the 1990s, tests rather than surveys were administered in order to detect the students' potential to work with scientific information and to gauge their expectations regarding the *Propedeutics of Scientific Work* and *Science Information* courses.

The so-called "information orientation" was first introduced at First FM UC at the beginning of the 1990s as a part of the instruction of methodology of scientific information, designed for medicine and dentistry students in the following courses: *Medical Electronics*, *Social Medicine*, *Computers in Medicine* and *Computer Basics*. In the non-medical tracks, the following classes were offered in 1994/1995: *Propedeutics of Scientific Work*, and *Science Information*. Prior to these dates, courses and seminars were offered at the Faculty of Medicine on bibliographies and library-related topics. The first reader, *Bibliography of Medical Literature*, appeared in 1968,[9] followed by *Propedeutics of Scientific Work in Medicine*[10] and *How to Look for and Use Scientific Medical Data*.[11] The information literacy courses are at present (academic year of 2013-2014) offered to non-medical tracks, such as Chemical Dependency, in the form of the following individual courses: *Introduction to Scientific Work* (first year of bachelor's studies programs of Chemical Dependency, Occupational Therapy, Physiotherapy, Nutritional therapy, and Nursing)

4 BAWDEN, David and Lyn ROBINSON. *Introduction to Information Science.* Chicago: Neal-Schuman, 2013. 351 p. ISBN 1-55570-861-0.

5 Information and Communication Technologies.

6 E.g.; Andrlová, A. – *Informační gramotnost ve zdravotnictví: se zaměřením na rozvoj informační gramotnosti pacientů*. Jehlíková, H. – *Informační gramotnost a informační potřeby studentů pedagogických fakult a role informačního vzdělávání na vysokých školách*. Stůj, V. – *Současný stav a možnosti výuky informační gramotnosti na Filozofické fakultě Univerzity Karlovy v Praze*.

7 E.g.; Hajduková, K. – *Koncepce rozvoje výuky informační gramotnosti v medicíně: se zvláštním zřetelem na její implementaci do akademického prostředí (curricula) na 2. lékařské fakultě Univerzity Karlovy v Praze*. Haug, J. D. – *Physicians' preferences for information sources: a meta-analytic study*.

8 See the Information Literacy Today section of this article.

9 CHOC, František. *Bibliografie lékařské literatury: Příručka pro mediky, lékaře, knihovníky a informační pracovníky: 1. díl.* Praha: Universita Karlova, 1970. 141 p.

10 DONNER, Ludvík. *Propedeutika vědecké práce v medicíně.* Praha: Státní pedagogické nakladatelství, 1979. 150 p.

11 HORÁKOVÁ, Květa and Jan DOMINEC. *Vědecké lékařské informace, jejich získávání a využívání.* Praha: MZ ČSR, 1986. 120 p.

and *Propedeutics of Scientific Research* (second year of the consequent magisterial studies program of Intensive Care). General medicine students receive basic orientation on how to navigate a library, catalogues and other information resources (EIZ) within the *Healthcare Informatics* block of lectures and seminars (first year; 1 lecture + 1 practicum per week).[12]

Research Preparation and Data Collecting Methods

This survey, which maps out the individual components of information literacy of non-medical students of First FM UC, intends to detect the differences between first year students; that is, those who are taking the course, *Introduction to Scientific Work,* as one of their core, prerequisite courses, and current second and third year students who have already taken the course as one of the prerequisites of their respective program curricula. The study examines the information needs of the two groups, how they perform their information search, and whether they utilize specific search tools when performing searches in the licensed databases of First FM UC, or the University proper. In addition, other components of their information behavior are examined (e.g.; use of resources for study, database search criteria, assessment of abilities to find required specialized information, participation at information preparedness courses, etc.).

The study, whose character is predominantly quantitative, was organized by the Institute of Scientific Information (ISI) of First FM UC and General University Hospital in Prague (GUH) between September 13 and November 15, 2013. First year students filled out electronic survey forms in their introductory class to the *Introduction to Scientific Work* course. Second and third year students were contacted vie email, referring them to the webpages containing the survey forms. At the end of the month of October, the request to fill out the electronic survey was re-sent to the second and third year students.

The survey contained the total of 8 parts, which will be introduced one-by-one in this paper. The questions were close-ended, while the section, "other," allowed the students to write their own answer should it be missing from the multiple-choice selection. More than one answer to certain questions could be selected to achieve greater precision of data processing.[13] The ninth, optional section asked about the types of e-resources that the students would like to include in the catalogue of the ISI of the First FM UC and GUH Library. The questions were open-ended, not offering multiple-choice answers.

The following hypotheses: 1. "The function of Science Information Centers at the UC medical faculties is only partial," 2. "Most students do their research on their own, not using the Information Center services," 3. "At the medicine faculties of the UC, there is little awareness of the Information Literacy courses and seminars that are being offered," have been worked into the article on information user behavior of the Second FM UC and University Hospital in Motol, Prague;[14] the hypotheses were true in the majority of cases, with the exception of Hypothesis 2, which was true only partially, for the second and third year students. Logically, the hypothesis did not apply to the newly admitted first year students. Yet another hypothesis, "Free resources are most frequently used at the First FM UC. The non-medical students prefer to use the PubMed and Bibliographia Medica Čechoslovaca (BMČ) databases," proved true, inspired by the practical experience of the author working at the ISI First FM UC.

[12] More information on the instruction is given in the section, Institute of Scientific Information of First Faculty of Medicine of Charles University and the General University Hospital in Prague of this article.

[13] These questions are marked * in the tables.

[14] HORVÁTH, David. Průzkum informačního chování uživatelů knihovny 2. lékařské fakulty UK a Fakultní nemocnice Motol v Praze. *ProInflow* [online]. 2014-07-01 [cit. 2014-08-10]. ISSN 1804-2406. Available from: http://pro.inflow.cz/pruzkum-informacniho-chovani-uzivatelu-knihovny-2-lekarske-fakulty-uk-fakultni-nemocnice-motol-v-praze

Institute of Scientific Information of the First Faculty of Medicine, Charles University in Prague and the General University Hospital in Prague

Since 2009, the ISI of the First FM CU and GUN has been located in the newly reconstructed building, at U Nemocnice 4, Prague 2. The library is one of the busiest parts of the building, offering many services to the nearly 10 000 registered users (students, lecturers, doctors, and general public). *Registration and Loan Services* are the core services, lending monographs, magazines, textbooks and academic degree works to the registered users; moreover, there are the *External Loan Services* which make it possible to borrow selected documents from without the library premises. One month is the usual loan period, though the loan period on the documents may be extended to four months. The documents may be reserved, and their loan period may be extended via the First FM UC catalogue. The library users also utilize other services available at the library, such as printing, copying and basic reference services offered by the library staff (catalogue search, basic steps of working with the Student Information System, etc.) In addition, the ISI library has computers with internet connection. Four computers are located in the study hall, three computers are located in the Registration and Loan site, and 25 computers are designated for instruction in an individual learning lab. The study room is open 53 hours a week, the Registration and Loan desk is open 46 hours a week. The library also provides interlibrary loan services (MVS) and international interlibrary loans services (MMVS). The SIS Book Fund has donated approximately 180 000 physical units to the library.

References and Electronic Resources forms another important part of the Institute. This service offers access to electronic information resources (databases, e-magazines, e-books). These resources are subscription-based, paid for either by the First FM CU or paid in part by the First FM CU and in part by the University, inter-university and other consortia. The First FM CU users have either direct access to the electronic resources (via the IP address of First FM CU) or remote access (via the Central Authentication Service from the GUH, home or other CU Faculties). The section offers the so-called “navigation services” that help users navigate the Faculty and University information resources. Retrieval services are yet another service that the section offers. The First FM CU users receive the service free-of-charge, while the general public is charged CZK 200/hour (upon their registration with the SIS Library). The students are offered methodical aid by retrieval specialists. The section organizes information seminars on e-sources (including trial access) and organizes lectures by international and local experts on our licensed databases, and e-magazine and e-book collections.

The section of *Evidence of Publication Activities and Student Work Assessment* is an indelible part of the First FM CU and GUH, collecting, processing, and evidencing the publication activities of the First FM CU and GUH employees and students. Records concerning the academic and scientific work of the First FM CU employees are processed and stored in the PBD (Personal Bibliography Database); via the Central Library of CU, the records are then supplied, upon the applicants’ request, to financial aid institutions (government departments, the Grant Agency of the Czech Republic, the Technology Agency of the Czech Republic, and the Academy of Science of the Czech Republic). These institutions then send their records to the so-called Registry of Information on Results (RIV). The results of the First FM CU employees are provided to the funders via the PBD, who send those to the RIV. The Czech Republic governmental body, *Council for Research, Development and Innovation*, assesses the application results on the basis of which funding is received by research institutions. The section also collects citing instances which are used for internal assessment of departments and individuals together with their scientific research record. The assessment is conducted in

accordance with the regulations of the *First FM CU Board of Science.* The evaluation results are published regularly in the yearly Faculty Report. In addition to collecting the latest data on research, experimental development and innovations, citation instances, and, as the case may be, other activities, the section organizes seminars and offers group and individual consultation.

The ISI also offers media services and support of the photography- and video-related activities of the First FM CU. For lectures and instruction, the section prepares video programs and digitalizes older instruction material; the section also helps generate e-learning materials; for English-speaking students, the section records and processes audio materials in English.

For the last 20 years, the ISI has also engaged in instruction of undergraduate and continuing magisterial studies students.[15] Skills such as how to actively use information resources both for study and for course and seminar papers, theses, and dissertations, form the core of the course. At the beginning of their studies, the students are familiarized with the basics of the library-information activities and services, and with the basic terminology of the library-information field. The students then learn specialized communication skills, such as independent information search, processing, and use. To a large degree, the instruction complements the undergraduate and graduate seminars that are taught at the First FM CU within the framework of individual program accreditation. Upon finishing the prerequisite course, the non-medical undergraduates will have been familiarized with the basic forms of written and verbal academic communication; they will know how to research, process and cite sources for their final papers and degree theses. The non-medical magisterial students deepen their basic user skills, while instruction focuses on particular areas of the students' information support. In addition to the above-given activities, the ISI instructors also take part at lecturing at the general medicine doctoral studies programs. Their courses focus on specialized science-related communication, work with electronic resources as regards citation, references and citation managers, and citing of works. The doctoral students also become familiar with the bibliometric and scientometric methods of evaluation of publication activities.[16]

Information Literacy Today

Many authors agree that there is minimum to zero information literacy concerning the majority of incoming college students.[17] The non-medical, General Nursing program showcases lack of

[15] Information about the ISI course offer is available from the First FM CU Student Information System, at: https://is.cuni.cz/studium/predmety/index.php?do=ucit&kod=04021&order=p.vsemzac&sort=desc

[16] HORVÁTH, David. Informační chování studentů a zaměstnanců 1. lékařské fakulty Univerzity Karlovy v Praze. *ITlib.* 2014, **18**(3), pp. 17-26. ISSN 1335-793X.

[17] CREEDY, Debra K., et al. Evaluating a Web-Enhanced Bachelor of Nursing Curriculum: Perspectives of Third year Students. *Journal of Nursing Education* [online]. 2007, **46**(10), pp. 460-467 [cit. 2014-08-10]. ISSN 1938-2421. Available from: http://www.ncbi.nlm.nih.gov/pubmed/17955743
KOZLOWSKI, Dawn. Using online learning in a traditional face-to-face environment. *Computers in Nursing* [online]. 2002, **20**(1), pp. 23–30 [cit. 2014-08-10]. ISSN 0736-8593. Available from: http://www.ncbi.nlm.nih.gov/pubmed/11838385 OLIFFE, John. On-line problem-based learning patient situated scenarios: Undergraduate evaluation and assessment outcomes. *Australian Electronic Journal of Nursing Education* [online]. 2001, **7**(1) [cit. 2014-02-22]. ISSN 1322-8676. Available from: http://scu.edu.au/schools/nhcp/aejne/archive/vol7-1/refereed/joliffe.html OLIFFE, John. Jimmy turns two! On-line problem-based learning patient situated scenarios: A comparison of 1999 and 2000 undergraduate student evaluations. *Australian Electronic Journal of Nursing Education* [online]. 2002, **8**(1) [cit. 2014-02-22]. ISSN 1322-8676. Available from: http://scu.edu.au/schools/nhcp/aejne/vol8-1/refereed/oliffe.html RIBBONS, Bob and Sheila VANCE. Using e-mail to facilitate nursing scholarship. *Computers in Nursing.* 2001, **19**(3), pp. 105-110. ISSN 0736-8593.

the students' ability to apply information literacy skills in practice. This lack is often ascribed to low attention of the curricula to development of information competences of nurses.[18] National surveys of information skills of nurses in the USA[19] and Sweden[20] show similar results. Henrietta Forsman at the same time argues that during the first two years of practice, the nurses never use the skills taught in information literacy courses. In this respect, it is often argued that there is information gap between the nursing programs and after-graduation practice.[21]

The national survey that took place in Norway in the academic year of 2000/2001 showed that the General Nursing students hardly used bibliographic databases when working on their final papers, theses and dissertations.[22] The results inspired Hilary Jacobsen to put together another study on the information behavior of third year General Nursing undergraduates, comparing the following two groups: a group with expanded instruction on information literacy, and a regular instruction group. At the beginning, both groups were unrealistic about their abilities to perform effective database and internet searches (concretely, the students maintained they had no difficulty finding the requested information in the given electronic resources and that they did so regularly), while not listing the two resources as their main sources of information. Instead, they would use their colleagues' knowledge, or books.[23] In addition, little difference was detected in the results of the two groups upon finishing their third year. However, other authors, who also did their research on groups of nursing students with and without supplementary information literacy instruction, arrived at the opposite results, examining them for longer periods of time, mostly for one and a half year. In this case, the results were striking: there was a clear shift in the use of databases for final papers and works. It is therefore obvious that information literacy courses ought to figure more prominently and extensively in the curricula of individual programs and Faculties.

The results of other surveys taken in the USA,[24] Great Britain,[25] and New Zealand[26] corroborate that the Healthcare Science or General Nursing students do not perform their

[18] CADMUS, Edna, et al. Nurses' skill level and access to evidence-based practice. *The Journal of Nursing Administration*. 2008, **38**(11), 494–503. ISSN 0002-0443. KOEHN, Mary L. and Karen LEHMAN. Nurses' perceptions of evidence-based nursing practice. *Journal of Advanced Nursing.* 2008, **62**(2), pp.209–215. ISSN 0309-2402.

[19] HART, Michael D. Informatics competency and development within the US nursing population workforce. *Computers, Informatics, Nursing*. 2008, **26**(6), pp. 320–329. ISSN 1538-2931.

[20] FORSMAN, Henrietta, et al. Use of research by nurses during their first two years after graduating. *Journal of Advanced Nursing*. 2010, **66**(4), pp. 878–890. ISSN 0309-2402.

[21] JACOBSEN, Hilary and Randi ANDANAES. Third year nursing students' understanding of how to find and evaluate information from bibliographic databases and Internet sites. *Nurse Education Today*. 2011, 31(8), pp. 898–903. ISSN 0260-6917.

[22] JACOBSEN, Hilary and J. KVITLE. *IKT-kompetanse og IKT-basert læring innen sykepleierutdanning HiO-rapport (ICT-competence and ICT-based learning in Nursing Education HiO- report).* Oslo, 2004, No. 3. Report.

[23] CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), pp. 320–323. ISSN 1536-5026. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969.

[24] CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a

searches in a satisfactory manner. In the USA, Caroline E. Brown[27]found that half of the students were experiencing difficulties in limiting their search and assessing the relevance of the found information. The survey also showed that textbooks and internet were the two most frequently used information resources. Lack of time is yet another issue concerning information search. Melissa Gross[28] points out that students are less interested in how to find the requested information, and so they have little knowledge or interest in special search techniques. At the same time, she cautions that the so-called "student motivation factor" is crucial for information search. In the review of her studies, Hillary Jacobsen[29] argues that skill development is related to the limited number of courses or modules offered in a year,[30] while other studies argue that courses and modules are regularly distributed in the curriculum of the entire study program.[31] Methods of instruction also differ, even though all courses involve a series of lectures, demonstrations and practicums, while some even provide feedback on relevant literature search. The systemic review prepared by Arri Coomarasamy[32] compared the effects of lectures and

challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), 320–323. ISSN 1536-5026. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *DanmarksForskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969.

25 CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), pp. 320–323. ISSN 1536-5026. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969.

26 SCOTT, Susan D., Jean GILMOUR and Jann FIELDEN. Nursing students and internet health information. *Nurse Education Today.* 2008, **28**(8), pp. 993–1001. ISSN 0260-6917.

27 BROWN, Caroline E., et al. Predictors of knowledge, attitudes, use and future use of evidence-based practice among baccalaureate nursing students at two universities. *Nurse Education Today*. 2010, **30**(6), pp. 521–527. ISSN 0260-6917.

28 GROSS Melissa and Don LATHAM. Undergraduate perceptions of information literacy: defining, attaining, and self-assessing skills. *College and Research Libraries* [online]. 2009, **70**(4), 336–350 [cit. 2014-02-23]. ISSN 2150-6701. Available from: http://crl.acrl.org/content/70/4/336.abstract

29 JACOBSEN, Hilary and Randi ANDANAES. Third year nursing students' understanding of how to find and evaluate information from bibliographic databases and Internet sites. *Nurse Education Today*. 2011, **31**(8), 898–903. ISSN 0260-6917.

30 COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), 320–323. ISSN 1536-5026. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), 4–10. ISSN 1904-1969. SCHUTT, Michelle A. and Barbara HIGHTOWER. Enhancing RN-to-BSN students' information literacy skills through the use of instructional technology. *The Journal of Nursing Education*. 2009, **48**(2), 101–105. ISSN 0148-4834.

31 CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. CRAIG, Ann and Sheilla CORRALL. Making a difference? Measuring the impact of an information literacy programme for pre-registration nursing students in the UK. *Health Information and Libraries Journal.* 2007, **24**(2), 118–127. ISSN 1471-1834.

32 COOMARASAMY, Arri and Khalid S. KHAN. What is the evidence that postgraduate teaching in evidence based medicine changes anything? A systematic review. *British Medical Journal* [online].

practical instruction during clinical praxis. The author argued that the students' knowledge improved during the lectures, while their practical knowledge and skills improved during practical instruction. Another study shows that the so-called "small group sittings" proved very fruitful in terms of improvement of the students' search skills.[33] Practice seminars included web tutorials,[34] learning materials,[35] and seminar works.[36] These methods were only effective to a certain degree; e.g.; in the study of Michelle A. Schutt,[37] the majority of students had difficulty using boolean operators and lemmatization tools.[38] In the study of Ann Craig,[39] the students had problems using both lemmatization tools and MeSH and CINAHL thesauri descriptors, while Danielle Carlock's[40] students said they had difficulties solely with MeSH and CINAHL descriptors. The feedback on search techniques via classification scale[41] or via the librarian responses to

2004, **329**(7473), pp. 1017–1021 [cit. 2014-02-23]. ISSN 1756-1833. Available from: http://www.ncbi.nlm.nih.gov/pubmed/15514348

[33] CRAIG, Ann and Sheilla CORRALL. Making a difference? Measuring the impact of an information literacy programme for pre-registration nursing students in the UK. *Health Information and Libraries Journal.* 2007, **24**(2),pp. 118–127. ISSN 1471-1834.

[34] CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), pp. 320–323. ISSN 1536-5026. CRAIG, Ann and Sheilla CORRALL. Making a difference? Measuring the impact of an information literacy programme for pre-registration nursing students in the UK. *Health Information and Libraries Journal.* 2007, **24**(2), pp. 118–127. ISSN 1471-1834.

[35] SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969.

[36] COUREY, Tamra, et al. The missing link: Information literacy and evidence-based practice as a challenge for nurse educators. *Nursing Education Perspectives*. 2006, **27**(6), pp. 320–323. ISSN 1536-5026. CRAIG, Ann and Sheilla CORRALL. Making a difference? Measuring the impact of an information literacy programme for pre-registration nursing students in the UK. *Health Information and Libraries Journal.* 2007, **24**(2), 118–127. ISSN 1471-1834. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969. SCHUTT, Michelle A. and Barbara HIGHTOWER. Enhancing RN-to-BSN students' information literacy skills through the use of instructional technology. *The Journal of Nursing Education*. 2009, **48**(2), pp. 101–105. ISSN 0148-4834.

[37] SCHUTT, Michelle A. and Barbara HIGHTOWER. Enhancing RN-to-BSN students' information literacy skills through the use of instructional technology. *The Journal of Nursing Education*. 2009, **48**(2), pp. 101–105. ISSN 0148-4834.

[38] Lemmatization devices make it possible to look for correct spelling versions and plurals of key words via the following placeholders: *, ?, $.

[39] CRAIG, Ann and Sheilla CORRALL. Making a difference? Measuring the impact of an information literacy programme for pre-registration nursing students in the UK. *Health Information and Libraries Journal.* 2007, **24**(2),pp. 118–127. ISSN 1471-1834.

[40] CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624.

[41] ibid

email questions concerning special search techniques[42] had positive effect on the students' literature search.

Other specialized literature pays attention to the methods of integrating information literacy to the core curriculum of General Nursing, and the possibilities of collaboration with the library staff.[43] Select studies point out that it is important to include information literacy in the core curricula. University librarians are recommended to include the proposed instructional procedures in educational practice, adopt new teaching methods, and design relevant courses.

The study of Michelle Honey[44] merits closer attention (because of the way in which e-sources are used in *Obtaining Specialized Information* and *Retrieval and Other Supplemental Services* chapters), who, together with her Auckland university colleagues in New Zealand, performed a survey among General Nursing students. The survey results led her to conclude that the university library services were not used in the previously assumed extent. Concretely, 43% of students never used the library services. The students who were using the library and its services were asked whether they used electronic resources, such as online catalogues, e-magazines, and databases, and whether they accessed the library services from home. 54 % of respondents used online catalogues, 42.5 % used e-magazines, 45 % used databases, and 29.5 % used remote access. Hence the library took measures to increase the students' information literacy. Concretely, the scope of library services was expanded, educational activities were organized, and services and one-on-one librarian or information specialist assistance were made more accessible. The library also began to promote its service via individual faculty.

The most important research concerning Occupational Therapy was published by Daniel Kipnis.[45] The results of his research on occupational therapy students show that:[46]

1. when searching for information, they most often address their peers, then friends, and only then a librarian;

2. prior to approaching a librarian, they work on their own, trying to find the desired information for approximately 30 minutes;

3. when encountering a problem with their search, they take the following three steps: trial—error, consultation of an expert, and finishing their search individually;

[42] SCHUTT, Michelle A. and Barbara HIGHTOWER. Enhancing RN-to-BSN students' information literacy skills through the use of instructional technology. *The Journal of Nursing Education*. 2009, **48**(2), pp. 101–105. ISSN 0148-4834.

[43] CARLOCK, Danielle and Jonna ANDERSON. Teaching and assessing the database searching skills of student nurses. *Nurse Educator.* 2007, **32**(6), pp. 251–255. ISSN 0363-3624. SCHNEIDER, Marie V., et al. Informationskompetance Samarbejde – sammenhæng – success? (Information competence Co-operation – connection – success?). *Danmarks Forskningsbibliotek Revy.* 2005, **28**(6), pp. 4–10. ISSN 1904-1969. SCHUTT, Michelle A. and Barbara HIGHTOWER. Enhancing RN-to-BSN students' information literacy skills through the use of instructional technology. *The Journal of Nursing Education*. 2009, **48**(2), pp. 101–105. ISSN 0148-4834.

[44] HONEY, Michelle, Nicola NORTH and Cathy GUNN. Improving library services for graduate nurse students in New Zealand. *Health Information and Libraries Journal* [online]. 2006, **23**(2), pp.102–109 [cit. 2014-08-10]. ISSN 1471-1842. Available from: http://www.ncbi.nlm.nih.gov/pubmed/16706865

[45] Thesis chair: PhDr. Hana Landová, Ph.D. KIPNIS G. Daniel and Anthony J. FRISBY. Information Literacy and Library Attitudes of Occupational Therapy Students. *Medical Reference Services Quarterly* [online]. 2006, **25**(4), pp. 11–20 [cit. 2014-08-10]. ISSN 1540-9597. Available from: http://jdc.jefferson.edu/cgi/viewcontent.cgi?article=1001&context=dan_kipnis

[46] The survey of Occupational Therapy students took place at Thomas Jefferson University, Pennsylvania.

4. for the most part, they would prefer personal consultation with the librarian over e-mail correspondence or telephone consulting;

5. the types of instruction of their preference are lectures combined with Powerpoint presentation, videos, case studies or guest visits, and internet exercises focusing on search in specialized databases;

6. over half of the students would prefer to take their information literacy orientation at the beginning of the semester so that they may become familiar with the library resources prior to receiving their assigned projects for their core courses.

The author of this study also did his survey with a sample of Pharmacology and General Nursing[47] students. Half of the results were identical (concretely, points 2, 5, 6 in the above overview of results), the rest of the results differed as follows:

1. when searching for information, the students first approach their librarians, then friends, professors, and only then their peers;

2. General Nursing students prefer traditional instruction while Pharmacology students are not interested in traditional instruction.

In comparison, Carol A. Powell,[48] performing her survey at Ohio State University, found that the nursing students most often searched for information via personal contacts, educational courses, the internet, and only then in the library. When it came to the use of the obtained information, it was the educational courses, presentation and colleagues that proved the most effective. We may therefore conclude that libraries are used, but that students prefer personal contacts. Michelle Mc Knight[49] arrives at the same conclusion.

Basic Data about Respondents

The total of 307 non-medical, first- to third-year students were addressed, of which 171 students filled out the survey forms. They were mostly the first year students who had the opportunity to fill out the forms during their Introduction to Scientific Work class at the beginning of the winter of 2013/2014 semester. By virtue of being filled out in class, nearly 100 % of the survey forms were returned to us. Every third of the second and third year students responded to the survey. Approximately 90 % of the students were women of no more than 25 years of age, which fully corresponds to the gender distribution in the list of students of the Student Information System of First FM UC. Some 3 % of first year students at First FM CU are also students of other Faculties, (e.g.; Faculty of Medicine of UC in Hradec Králové, South Bohemia University, Czech Agriculture University). The second and third year students who filled out the survey forms are not studying at any other university. The largest number of the respondents were students of Physiotherapy, Chemical Dependency, and Nutrition Therapy, which again corresponds with the number of students in individual programs. For better illustration, the following tables summarize the collected data.

[47] The survey took place at Natural Sciences University and Temple University, Pennsylvania.

[48] POWELL, Carol A. and Jane CASE-SMITH. Information literacy skills of occupational therapy graduates: a survey of learning outcomes. *Journal of the Medical Library Association* [online]. 2003, **91**(4), pp. 468-477 [cit. 2014-08-10]. ISSN 1536-5050. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC209513/

[49] McKNIGHT, Michellyn and Melissa PEET. Health care providers' information seeking: Recent research. *Medical Reference Services Quarterly*. 2000, **19**(2), pp. 27–50. ISSN 1540-9597.

Tab. 1 Summary of respondents' data

Number of students addressed	Number of responses	Percentage of responses
307	171	66.48 %

Tab. 2 Responses according to year of study

	First year	Second and third year
Number of filled-out forms	97.17 %	35.79 %

Tab. 3 Age of responders pursuant to year of study

Age (years)	First year	Second and third year
25 and below	96 %	94 %
26 — 35	3 %	4 %
36 and above	1 %	1 %

Tab. 4 Gender of surveyed responders

Gender	First year	Second and third year
female	89 %	91 %
male	11 %	9 %

Tab. 5 Faculties of surveyed responders

Faculty	First year	Second and third year
First FM UC	97 %	100 %
Other Faculties and universities	3 %	0 %

Tab. 6 First FM UC programs

Program	First year	Second and third year
Chemical Dependency	24 %	25 %
Occupational Therapy	16 %	15 %
Physiotherapy	25 %	28 %
Nutritional Therapy	18 %	25 %
General Nursing	17 %	7 %

Getting Specialized Information

In the part concerning the gathering and use of specialized information, the respondents provided information on the frequency with which they used the First FM UC and GUH Library. Further questions concerned the kinds of information they get in the library, and the concrete resources they find important for their studies or profession.

Pursuant to the below-given tables, the surveyed students belonging to each year of study used the library once or twice a month. 9 % of first year students used the library at the beginning of their studies. The upper-level survey also suggests that all students register at the library at a later time. All students have agreed on the following kinds of information they most often get from the library (on a sliding scale): 1. information concerning their courses 2. information for personal use 3. information for their profession. However, we received differing responses to the question regarding the places of information search. The first year students ranked the sites as follows : 1. public access resources 2. university of Faculty website or portal 3. library via a librarian or information specialist 4. library website or portal.

The second and third year students ranked public access resources and library portal first and second, the Faculty or university portal took the third place, and library via a librarian or information specialist took the fourth place. The differences are possibly caused by the fact that the first year students are yet to become familiar with the library and so they prefer to use the services of the librarian and information specialist rather than the library website. The most frequently used sources as ranked by all students are as follows: 1. internet (free e-sources), 2. monographs, 3. peers (social networks, blogs), 4. peers (oral consultation), 5. peers (email communication). The first year students do not list serial electronic sources and databases as yet. We expected that the second and third year students would utilize the sources more frequently; however, our assumption was incorrect. Their use of serial electronic sources was 11 % higher than that of the first year students; however, the database is more frequently used only by 6 %.

Table 7. Frequency of First FM CU and GUH Library use

Use of Library Services	First year	Second and third year
more than 1x weekly	5 %	3 %

Use of Library Services	First year	Second and third year
1 x weekly	19 %	22 %
1x - 2x monthly	63 %	60 %
1x - 2x every six months	3 %	12 %
less than 1x every six months	1 %	3 %
never	9 %	0 %

Table 8. What kind of information do you look for in the library?

Information	First year	Second and third year
study information	65 %	62 %
personal use information	17 %	22 %
profession-related information	10 %	8 %
research-related information	8 %	8 %
other	0 %	0 %

Table 9. Where do you look for specialized information?

Information search sites	First year	Second and third year
web or library portal	9 %	31 %
web or Faculty portal	27 %	20 %
commercially available sources	5 %	6 %
public sources	45 %	31 %
library via a librarian or information specialist	14 %	12 %
other	0 %	1 %

Table 10. Use of different kinds of resources for studies, research and profession

Sources	First year	Second and third year
monographies	82 %	84 %
periodicals and articles	7 %	18 %
databases	3 %	9 %
colleagues—oral consultation	38 %	38 %
colleagues—social media, blogs	39 %	51 %
colleagues—email	22 %	32 %
internet	96 %	96 %
courses and information seminars	13 %	7 %
conferences, electronic conferences	1 %	3 %
librarian or information specialist	2 %	6 %

Electronic Information Resources

The First FM CU database and some database interfaces (e.g.; EBSCO, ProQuest, PubMed) are among the most important electronic information resources. Because the first year students do not search the databases very often, they do not use specific search tools, either. 19 % of first year students use key words for their searches. The second and third year student do use the databases; however, upon close examination, we found that they used free sources, such as PubMed, BMČ, or Google Scholar. Medline is yet another database that they use — however, the database is also a part of the PubMed public database interface, and so freely accessible and indexed by Google. There is a fairly simple explanation: for their bachelor's theses, the undergraduate students mostly use Czech sources, such as BMČ, and so they feel no need to use specific foreign citation databases, such as the Web of Science, Scopus and the pro-EU Embase, focused on biomedicine and pharmacology. The majority of second and third year students use keywords for their search and, in some cases, filters and the boolean operators AND, OR and NOT. The group grants the highest importance to full text availability (68 %) and currency of information (16 %). When self-assessing their awareness of electronic information resources accessible from their mother university or Faculty, the first year students awarded themselves the fourth grade. The second and third year students granted themselves the third grade (the assessment scale runs from first grade —the best—to fifth grade). The self-

assessment of their abilities to find the necessary information turned slightly better results: the first year students awarded themselves the second grade, the second and third year students awarded themselves the third grade. Even though the second and third year students took *Introduction to Scientific Work* in their first year, it is obvious that they do not consider their skills and abilities good enough to perform specialized information searches and be well-versed in electronic information sources. As regards the next part of the survey on information literacy instruction, it is these students who would welcome the inclusion of *Introduction to Scientific Work* in the second-year curriculum, the reason being that some information concerning the Faculty electronic resources (and research) is better used for bachelor's theses in the following year.

Table 11. Which database (interface) do you use most frequently for studying, work, or research?

Database	First year	Second and third year
PubMed	7 %	25 %
BMČ	0 %	26 %
Medline	1 %	7 %
Embase	0 %	0 %
Google Scholar	6 %	16 %
ScienceDirect	0 %	0 %
Scopus	0 %	0 %
Web of Science	2 %	1 %
I never/hardly ever use databases	83 %	19 %
other	2 %	4 %

Table 12. Which search tools do you use most frequently? *

Search tools	First year	Second and third year
key words	19 %	62 %
filters	5 %	16 %
thesauri (MeSH, EMTREE, etc)	0 %	2 %

Search tools	First year	Second and third year
boolean operators	1 %	10 %
proximate operators	0 %	1 %
wild card symbols (e.g.; ?,*)	0 %	3 %
none	75 %	6 %

*The respondents were allowed to select more than one answer

Table 13. Which criterion do you find the most important when performing database search?

Criterion	First year	Second and third year
accessibility of full text	11 %	68 %
currency of information	9 %	16 %
continuous alerts, RSS services	1 %	0 %
abstracts available	0 %	4 %
retrospective	0 %	0 %
I do not use databases	80 %	10 %
other	0 %	1 %

Table 14. What is your ability to find the requested specialized information?

Ability to find information (1 — excellent, 5 — insufficient)	First year	Second and third year
1	3 %	1 %
2	43%	26 %
3	35 %	59 %
4	14 %	10 %
5	6 %	3 %

Table 15. What is your current awareness of electronic information resources available from the Faculty and the university?

Awareness of electronic sources (1 —excellent, 5 — insufficient)	First year	Second and third year
1	1 %	4 %
2	8 %	24 %
3	24 %	53 %
4	41 %	16 %
5	26 %	3 %

Information Literacy Education: Courses and Seminars

The largest part of our survey of information literacy focuses on the courses the students would like to see in various areas of information literacy; their opinion about the core course, *Introduction to Scientific Work;* and whether they prefer e-learning types of courses over lectures and practice seminars, etc. The conclusion of this section pays attention to the use of WikiLectures (WikiSkripta), the important electronic source supporting instruction of individual subjects at First FM CU.

The large majority of all students admitted that prior to entering the Faculty, they would not take any information preparedness or information literacy courses, nor did they have the opportunity to take any such course. 36 % of the first year students and 43 % of the second and third year students showed interest in the courses. Only 11 % of the first year students and 16 % of the second and third year students follow the Faculty information literacy course offer (at the ISI pages). The topics of interest are as follows: after written specialized communication, the first year students placed citing of works, familiarity with databases, and specialized oral communication. The second group of the second and third year students provided the following order of priority: written specialized communication, citing of works, familiarity with databases and with e-magazines. On the other hand, both groups agreed that a course on how to use library database catalogues, including union catalogues, was of the least interest. About half of both groups was interested in an e-learning supplementary course (50 % of the first year, 57 % of the second and third year students).

Questions targeting the second group exclusively asked whether, upon finishing the *Introduction to Scientific Work* course, the students would recommend that the course be included in the core curriculum of the undergraduate programs of First FM CU, and in which year. 82 % of responses were positive — that the course should be included in the core curriculum. 43 % of respondents would prefer to take the course in their second year of the program because they have better opportunity to utilize the content[50] of the course in the upper-

[50] These topics are given in Table 20. Introduction to Scientific Work also contains publicly available internet source search and poster preparation.

level of their studies—most often, one year before their bachelor's exams. Both groups agreed that they preferred traditional lectures and seminars with practicums over e-learning courses.

The last question concerning WikiLectures[51] generated interesting answers. The first year students seem to use the site from the very beginning of their studies — it is used by approximately 85 % of students. The second and third year students use WikiLectures regularly — the total of 97 % of respondents. WikiLectures has therefore become a fully integrated learning source of First FM UC, used by all students regardless of the fact that our survey of the first year students took place at the beginning of the 2013-2014 academic year. This means that the first year students were referred to WikiLectures by their faculty, who must have included electronic versions of their lectures in the list of required or recommended course literature; hence the students had already been exposed to WikiLectures, or used the source for searches and studying.

Table 16. Have you ever taken information preparedness courses (how to look for specialized information, work with databases, research methods and strategies, etc.) outside First FM CU?

Participation at information preparedness courses	First year	Second and third year
yes	12 %	3 %
no	88 %	97 %

Table 17. Have you ever had the opportunity to take information preparedness courses?

Opportunity to take information preparedness courses	First year	Second and third year
yes	12 %	10 %
no	88 %	90 %

Table 18. Would you be interested in information preparedness courses if your library offered those?

Interest in information preparedness courses	First year	Second and third year
yes	36 %	43 %
no	6 %	9 %

[51] WikiSkripta (WikiLectures) serves as the electronic instruction support mostly at the FMs of UC.

Interest in information preparedness courses	First year	Second and third year
I don't know	58 %	49 %

Table 19. Do you follow information preparedness courses offer at your Faculty, workplace, etc?

Following of information courses offers	First year	Second and third year
yes	11 %	16 %
no	89 %	84 %

Table 20. Which specialized seminar or supplementary course would you be interested in taking should your library offer those? *

Interest in concrete specialized seminars on:	First year	Second and third year
databases	15 %	13 %
e-magazines	7 %	9 %
e-books	8 %	7 %
presentations, specialized oral communication and skills	14 %	16 %
specialized written communication (annotations, abstracts, reports)	18 %	15 %
medicine and evidence-based health science	8 %	8 %
citing	16 %	15 %
retireval strategies	5 %	7 %
publishing and related activities	4 %	4 %
references and citations	3 %	4 %

Interest in concrete specialized seminars on:	First year	Second and third year
managers		
catalogues and union library catalogues	1 %	1 %
others	0 %	0 %
I am not interested in any seminar	0 %	1 %

*The responders were able to select more than one answer

Table 21. Would you give preference to an e-learning course?

Interest in supplementary e-course	First year	Second and third year
yes	50 %	57 %
no	50 %	43 %

Table 22. Would you include *Introduction to Scientific Work*, which you took in your first year, in the core course list of your Faculty program?

Interest in Introduction to Scientific Work	First year	Second and third year
yes	—	82 %
no	—	18 %

Table 23. Which type of instruction would you prefer in *Introduction to Scientific Work* ?

Type of instruction	First year	Second and third year
traditional lectures, seminars and practicums	51 %	44 %

Type of instruction	First year	Second and third year
e-learning course with live lectures	31 %	18 %
consultations with an instructor supplemented with e-learning support	15 %	29 %
e-learning course without live lectures	3 %	4 %
none	0 %	3 %
other	0 %	1 %

Table 24. Do you use WikiLectures?

WikiLecture use	First year	Second and third year
yes	72 %	97 %
no	28 %	3 %

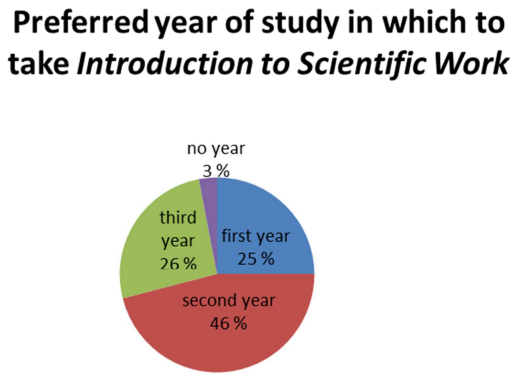

Figure 1. In which year of study should *Introduction to Scientific Work* be taken? *

*Only second and third year students responded

Retrievals and Extra Services

This part of our survey concentrated on extra services provided by the library, such as Information, Retrieval, Reference and Navigation services (information about electronic information resources, direct and remote access), Interlibrary Loans services, or the National Medical Library services. This part also enquired whether the students would use a joint portal of

the Medical Faculties and the Pharmacological Faculty of CU if it were created, or whether they would prefer a joint retrieval center.

The answers are as follows: the first year students do not do retrievals (89 %). Answers vary with the second group — 47 % of respondents do individual retrievals, while 47 % do not. None of the respondents uses continuous retrievals, nor do they use alerts. The students use the library website, peers, faculty, or social media to find out about the upcoming events organized by the library. The First FM CU Library website only appears in the fourth place in their responses. Approximately 50 % of the respondents responded “probably yes” to the idea of a joint portal or retrieval center of the Medical Faculties and the Pharmacological Faculty of CU, which would back and coordinate the activities of individual retrieval workplaces. At the same time, the integrated portal would be managed so that the users may receive information about upcoming events, electronic sources, and other extra services.

Remote access to electronic information sources is used as follows: by 68 % of the second and third year students, by 36 % of the first year students. E-books, whether regularly or occasionally, are used by 73 % of the upper-level students as opposed to 47 % of the first years. Most respondents have no idea about the existence of the interlibrary loan service. If so, it is the upper-level students (50 % as opposed to 8 %). Even so, only 13 % of the second and third year students use interlibrary services with electronic document delivery, as opposed to 4 % of the first year students. The services of the National Medical Library, which offer access to supplementary information sources, i.e.; sources unavailable from the First FM CU Library, are also used by a small percentage of students: 28 % of second and third year students, and 11 % of first year students.

These results show that the so-called “extra services” are not used as frequently as expected. The SIS of First FM CU and GUH may therefore promote the services via the library and its webpages, social media such as Facebook, and via emails and the faculty who use e-books and other e-sources for their instruction.

Table 25. What is the most common way in which you obtain a retrieval on a specialized research topic?

Ways to obtain retrievals	First year	Second and third year
I do not prepare my retrievals nor do I use a specialist	89 %	47 %
I prepare my own retrievals	9 %	47 %
I use library information specialists (i.e.; Institute of Scientific Information)	0 %	1 %
I use information specialist in my work or library branch	2 %	1 %
I use commercial retrieval specialists	0 %	3 %

Table 26. Do you use any extra services (e.g.; continuous retrievals, alerts)?

Ue of extra services (continuous retrievals, alerts)	First year	Second and third year
yes	2 %	3 %
no	98 %	97 %

Table 27. Which sources inform you of the upcoming events (e.g.; seminars, talks, trial access) organized by your library?

Sources of information about library events	First year	Second and third year
Faculty webpages	26 %	26 %
Library webpages	10 %	17 %
colleagues, peers, faculty	28 %	21 %
social media	20 %	18 %
information handouts, bulletins, Faculty magazines	7 %	5 %
Faculty information boards	8 %	13 %

Table 28. Would you prefer a joint portal of the MU and Pharmacology Faculties of CU?

Joint portal	First year	Second and third year
yes	35 %	28 %
possibly	49 %	60 %
I don't know	14 %	10 %
probably not	3 %	0 %
no	0 %	1 %

Table 29. Would you use the services of a joint retrieval center of MFs and Pharmacology Faculties of CU?

Retrieval Center of MFs and Pharmacology Faculties of CU	First year	Second and third year
yes	24 %	19 %
possibly	54 %	46 %
I don't know	17 %	34 %
probably not	3 %	1 %
no	1 %	0 %

Table 30. Do you use remote access to access the First FM CU electronic information resources from home?

Use remote EIS access	First year	Second and third year
yes	36 %	68 %
I am not aware of this option	30 %	9 %
no	34 %	24 %

Table 31. Do you use e-books?

	First year	Second and third year
yes, regularly	5 %	16 %
yes, sometimes	42 %	57 %
no	53 %	26 %

Table 32. Do you use interlibrary services (IS) or electronic document delivery service (DDS)?

Use of free Interlibrary or DDS services from the library	First year	Second and third year
yes	4 %	13 %
no	96 %	87 %

Table 33. Do you know that the IS and DDS are free for registered library members?

Informed about free IS and DDS offered by the library	First year	Second and third year
yes	8 %	50 %
no	92 %	50 %

Table 34. Do you use the National Medical Library services?

Use of National Medical Library services	First year	Second and third year
yes, regularly	2 %	9 %
yes, irregularly	9 %	19 %
no, but I used to	3 %	9 %
no, I never have	86 %	63 %

Social Media

The last part of our survey enquired about the social networks used by the students for specialized information-sharing. The respondents were able to mark more than one answer.

Facebook is the most commonly used network (71 % of first year students versus 81 % of second and third year students), Google+ (10 % versus 12 %) a LinkedIn (1 % versus 5 %). However, up to one third of the first year Occupational Therapy students do not share their information via any social media. Chemical Dependency students use Facebook and combinations of other media, such as Google+ and LinkedIn or Google+ and Twitter. Students from other programs list only Facebook and Google+. Only one student of General Nursing uses Google+ exclusively. Email is also mentioned by the first year students.

The specifics of the second and third year students are as follows: all programs except Occupational Therapy use Facebook, or, as the case may be, Facebook and Google+ (this combination is most prevalent with Physiotherapy students – 5 out of the total of 9 students of all

programs excluding Occupational Therapy). Another variation is the use of Facebook and LinkedIn concurrently; these are used by 3 students of Occupational Therapy, Nutritional Therapy and General Nursing. 1 Occupational Therapy student uses LinkedIn only. 1 student of Chemical Dependency simultaneously uses Facebook, Google+ and ResearchGate.

Table 35. Which social media do you use for information sharing?*

Social media use	First year	Second and third year
Facebook	71 %	81 %
Google+	10 %	12 %
LinkedIn	1 %	5 %
Twitter	1 %	1 %
ResearchGate	0 %	1 %
Mendeley	0 %	0 %
MySpace	0 %	0 %
Academia.edu	0 %	0 %
other	17 %	0 %

* The respondents were allowed to select more than one option

Suggestions and Recommendations for SIS First FM CU Library

The elective part of the survey asked the responders about the databases and e-magazines that the students would like to see offered by the Faculty, and in the SIS First FM CU and GUH Library.

The first year students produced fewer responses to this part of the survey because they had not had the opportunity to become familiar with the way the Library worked, nor with the electronic information resources offered by the Faculty. That is why they did not respond to the question regarding suggested Faculty databases. The second and third year students would like to see Rehabilitation-focused databases, e.g; OTDBASE, and legal, social work and social policy databases.

As regards e-magazines, all student groups had agreed that the magazine, *Adiktologie*, ought to be included. The first year students would like to see magazines with the latest news in physiotherapy (however, they did not list any concrete titles), and magazines on the latest physiotherapy methods. The second and third year students were more concrete in their answers. They were interested in the following magazines: *Clinical Rehabilitatio*n and *Neurologie pro praxi*, which are nevertheless publicly accessible, or the *Journal of Occupational*

Therapy edition series (concretely, *American Journal of Occupational Therapy* – accessible to registered library users, and *Canadian, Scandinavian* – accessible for the limited time period of one year). The survey results show that the responders had little knowledge of electronic magazines, which is corroborated by Table 15, where upper-level students give themselves a grade 3 for their awareness of the Faculty and university electronic resources. Nutrition and food-oriented magazines also appear among the suggested e-magazines.

The first year students would like to have biology surveys and individual course exam questions available to them in the Library, and a greater number of books. The upper-level students would like to see more literature on chemical dependency, occupational therapy, alternative diets, weight loss diets, and instructions on how to write a bachelor's thesis. Lastly, they suggest that more professional practice - related publications ought to be included in the library portfolio.

Summary and Conclusion

The survey of information literacy of the First FM CU non-medical students had the following results: an average responders is a female, aged 25 years or less. She uses the Library once or twice a month. Most often, she seeks information concerning her studies in the Library. In the event that she searches for information outside the Library, she uses publicly accessible internet sources. She gives herself the grade of 2-3 for her ability to find the sought-after information, and the grade of 3-4 for her awareness of the electronic resources offered by the Faculty and university. If she is a first year student, she does not use any databases. If she is an upper-level student, she most often uses the BMČ or PubMed databases; that is, public sources where she performs her search via key words.

She does not take any elective information literacy seminars in addition to her core course; she does not keep track of the new seminar offer, either. In the event the Library offered any such seminars, most often than not, she responds with "I don't know" when asked whether she would like to take any such seminar. Concerning the seminars of her preference, (e-learning versus traditional seminars) 53.5 % prefers e-learning. Citation of literature and specialized written (and oral in upper levels) communication are the preferred seminar topics. She is interested in the *Introduction to Scientific Work* required course of the core curriculum of the First FM UC. The current style of instruction is the preferred one; therefore, traditional lectures and seminars (practicums) may remain unchanged. She uses WikiLectures.

She does not do any research nor does she process preliminary retrievals. She is interested in a joint portal and research center of FMs and Pharmacology Faculty of UC. She does not have sufficient information on continuous retrieval nor on the interlibrary loan services. She uses e-books and remote access to electronic sources. She most often uses Facebook for specialized communication.

The motivation factor that the Library generates is another important issue to consider. Obviously, the Library has to respond more swiftly to the information needs of the students, introducing relevant means by which the students may receive Library services updates in a timely manner, e.g.; via information handouts placed in the study room, the loan room, on the ISI information boards, and via educational events, via supporting the ISI webpages by the faculty, via posting information about the Library events in social media, or via competitions and quizzes organized by the Library. Due to the newly purchased collections of e-books for the courses, some collaboration between the Library and the faculty has already begun. The survey results make it obvious that teaching the course, *Introduction to Scientific Work,* over a two-year period

may be beneficial i.e.; First semester of the First year (freshmen information about the functioning of the library, catalogue and database search, introduction to written and oral specialized communication), and 2nd semester of the 2nd year (citing of literature, citing and reference managers, advanced database search, bachelor's thesis writing and specialized written communication). These and other measures, such as the Faculty electronic support of information preparedness may increase the low information literacy of students.

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