# STUDENTS' INFORMATION COMPETENCE AND ITS IMPORTANCE FOR LIFE-LONG EDUCATION

**Larissa Turusheva**
Latvia University of Agriculture, Jelgava, Latvia
E-mail: examinat@llu.lv

## Abstract

*The objective of the paper is to define information competence, its levels and components, to find out the reasons of low level of information competence among first-year students. Scientific literature analysis, CLRIT (Commission on Learning Resources and Instructional Technology) materials, Information Literacy Competency Standards for Higher Education (ACRL, 2000) and other data are used to analyze the role of foreign languages and IT skills for the development of information competence of a student. Questionnaires and interviews with the students give the necessary data for the analysis of students' information competence. The main conclusions are that self-management and time management of students pay an important role in their use of the Internet and the library, showing preference for the Internet resources for the reason of their easier and quicker accessibility in comparison with the use of library resources. Foreign languages are often needed to gain the necessary information, especially for some specialties, for which information can be found only in English. Information competence is developed during the whole life, and teachers of any subject should pay serious attention to developing information search, selection, evaluation, analysis and presentation skills.*
**Key words:** *information competence, information literacy competency standards, life-long learning skills.*

## Introduction

The time we are living in is called information century. Sociological research shows that organisations work with about 2,7 mln documents a year. In average an office worker reads documents about 24 hours a week (Information Competence in the CSU, 1995). As the result of these data a question arises on how much information can be acquired.

America Association of Higher Education (AAHE) published information that 50% of the students' knowledge is forgotten in several months. If the students had been warned to be tested immediately after the lecture, being allowed to use their notes, they could answer only 42% of questions, in a week their result was only17% of questions (Information Competence in the CSU, 1995).

At the same time it is important to remember that 50% of the information acquired at the university become old in 5 years, which makes professionals improve their knowledge and skills regularly (Kozlowski, 1988). New technology gives an opportunity to be fully responsible for own studies and trust own communication and information skills. It is necessary to be able from huge information amount to evaluate and to choose the necessary one. This ability includes *media competencies* components (Schell et al., 1999):

- *Technical competency* includes knowledge and new media composition and features;
- *Information evaluation competency* – from huge information to choose the necessary, to divide important from unimportant, valid from non-valid, authentic from false information;
- *Communicative competence* – is not only direct (person-to-person) interaction. This kind of communication is more flexible, it can happen in any place or time, but the information often is impersonal. The information is received, evaluated, and distributed in a non-official way, non-directly.

These facts prove that students need not so much knowledge itself, but the so-called information competence to survive in the changing information environment.

Often information competence is defined as a skill of searching, evaluating, using and distributing all kinds of information, which is developed during whole life.

*Problem of the research*

It is well known that students at the beginner level of competence usually are satisfied with any information found, having preferences in the Internet sources because of easier access to the material. They choose web engines to easily find the necessary information. It can be explained with non-critical evaluation of the source, easier form of the Internet material for understanding, no need in productive thinking in comparison with serious scientific books and journals reading.

The quality of information is of big importance, it should meet such requirements as:

- represent full information;
- be understandable;
- be useful;
- be trustful;
- be actual, current;
- be accessable.

## Methodology of Research

Both quantitative and qualitative methods of research were used. A new method, study space analysis, has been used for evaluating gaps in the students' information competence. To define information competence, its levels and components, the author used theoretical literature analysis and synthesis. Questionnaires analysis (conceptual analysis and comparative analysis, alternative comparison) gave the necessary information about the level of students' information search skills and the use of library. Pedagogical, empirical direct observation on the students' study work and presentations, gave the data for the analysis of students' information competence level and development. Students' information competence has been evaluated during 4 years of their studies.

## Results of Research

Information competence is a basis for long-life learning competence. It is necessary in any way of learning, it makes learning needs-oriented, more self-directed.

Information competence is a skill:

- to determine the size of the necessary information;
- to use the necessary information effectively;
- to evaluate the information and its sources critically;
- to develop own knowledge base with the information chosen;
- to effectively use the information for goal achievement;
- to use the information ethically (ACRL, 2000).

Not less important is the skill to understand, at what time some information is needed, as well

as the skill to get, evaluate and use the information effectively. Information is available at libraries, public resources, special organizations, media, the Internet, but the information we deal with is received in a non-filtered way, which arouses a question about the material authenticity, validity and quality. Huge information volumes and non-safe information quality cause problems for information users (ACRL, 2000).

To investigate students' information competence level and its development during the study process at the university, Latvia University of Agriculture students' questionnaire results have been compared with the Geneva University students' results.

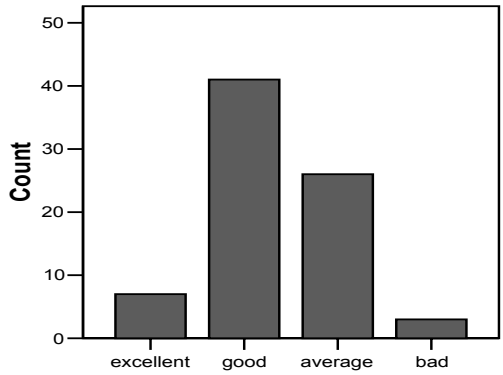


**Figure 1. Students' Self-Evaluation of Information Searching Skills (Turusheva & Turusheva, 2007).**

The research at LLU (fig. 1) proves that only half of the 1st year students evaluate their information searching skills as excellent (6%) and good (33%). It looks dramatically that each second student finds his/her skills as average (21%) or bad (Turusheva & Turusheva, 2007).

To investigate the situation with the use of library resources, LLU and Geneva University students' library use has been compared.

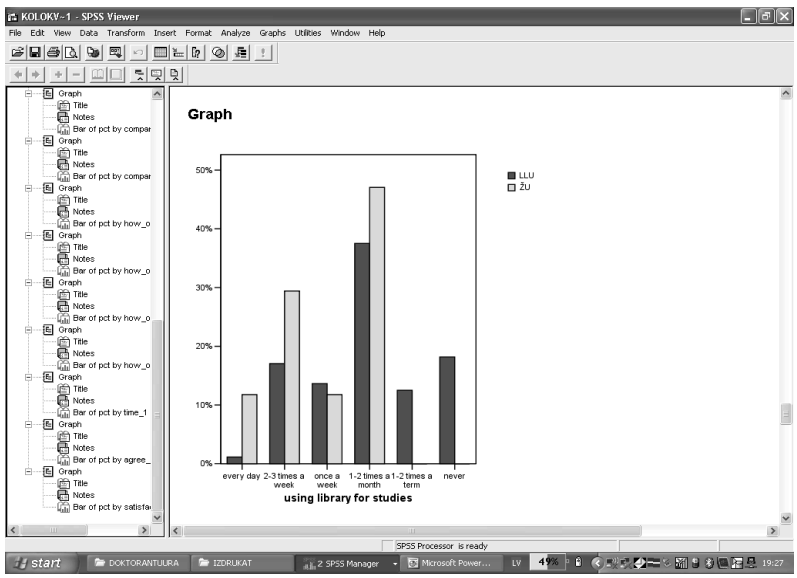


**Figure 2. Library Use for Studies (Turusheva &Turusheva, 2006).**

The results of the questionnaire (fig. 2) showed a dangerous tendency at LLU: 18% of LLU 1st year students never use the library, 12% of students use it only 1-2 times a term (all together 30%). At the same time, there are no such students at Geneva University at all. In comparison, better results

of Geneva University students are also for those who often work at the library. At Geneva University 12% of students use the library every day (in comparison: LLU – 1, 5%), and 2-3 times a week - 29% (LLU – 16%) (Turusheva & Turusheva, 2006). These results show LLU students' problems with learning and information competence in the 1st year of their studies at the university. Thus, it became clear that one of the most important tasks of higher education in Latvia is to develop students' information competence and to provide them with the tools of searching, evaluating, analyzing and presenting information.

Commission on Learning Resources and Instructional Technology (CLRIT) at California University have worked out a definition of information competence, which more accurately defines the components of information competence: *Information competence* is a library, computer, mass media literacy skills, technology skills, as well as ethics, critical thinking and communicative skills fusion or integration (Information Competence in the CSU, 1995).

Though, from a pedagogical point of view, „critical thinking", which is a psychological term, should be exchanged with a pedagogical term „productive thinking". Speaking about competence, the term „*cluster*" defines the competence more precicely than „*fusion*".

In this case, with the changes made, the definition sounds as follows: *information competence* is a library, computer, mass media literacy skills, technology skills, as well as ethics, productive thinking and communicative skills cluster or integration.

Content, instruction and assessment of information competence principles are worked out in the *Information Literacy Competency Standards For Higher Education* (2000), published by the Association of College and Research Libraries (ACRL) (table 1). Each standard has 3 levels: beginning, proficient, advanced (Information Literacy Competency Standards for Higher Education, 2000; Rubrics for Assessing Information Competence in the California State University, 2002). To our mind, it also corresponds to H. Dreyfus' levels in competence development (Dreyfus & Dreyfus, 1980; 1986).

**Table 1. Information Literacy Competency Standards for Higher Education (Information Literacy Competency Standards for Higher Education, 2000).**

| ACRL Standard | Beginning | Proficient | Advanced |
|---|---|---|---|
| 1. Determine the Extent of the Information Needed | Student is unable to effectively formulate a research question based on an information need. | Student can formulate a question that is focused and clear. Student identifies concepts related to the topic, and can find a sufficient number of information resources to meet the information need. | Question is focused, clear, and complete. Key concepts and terms are identified. Extensive information sources are identified in numerous potential formats. |
| 2. Access the Needed Information Effectively and Efficiently | Student is unfocused and unclear about search strategy. Time is not used effectively and efficiently. Information gathered lacks relevance, quality, and balance. | Student executes an appropriate search strategy within a reasonable amount of time. Student can solve problems by finding a variety of relevant information resources, and can evaluate search effectiveness. | Student is aware and able to analyze search results, and evaluate the appropriateness of the variety of (or) multiple relevant sources of information that directly fulfill an information need for the particular discipline, |
| 3. Evaluate Information and its Sources Critically | Student is unaware of criteria that might be used to judge information quality. Little effort is made to examine the information located | Student examines information using criteria such as authority, credibility, relevance, timeliness, and accuracy, and is able to make judgments about what to keep and what to discard. | Multiple and diverse sources and viewpoints of information are compared and evaluated according to specific criteria appropriate for the discipline. Student is able to match criteria to a specific information need, and can articulate how identified sources relate to the context of the discipline. |

| ACRL Standard | Beginning | Proficient | Advanced |
|---|---|---|---|
| 4. Use Information Effectively to Accomplish a Specific Purpose | Student is not aware of the information necessary to research a topic, and the types of data that would be useful in formulating a convincing argument. Information is incomplete and does not support the intended purpose. | Student uses appropriate information to solve a problem, answer a question, write a paper, or other purposes. | Student is aware of the breadth and depth of research on a topic, and is able to reflect on search strategy, synthesize and integrate information from a variety of sources, draws appropriate conclusions, and is able to clearly communicate ideas to others. |
| 5. Understand the Economic, Legal, and Social Issues surrounding the Use of Information, and Access and Use Information Ethically and Legally | Student is unclear regarding proper citation format, and/or copies and paraphrases the information and ideas of others without giving credit to authors. Student does not know how to distinguish between information that is objective and biased, and does not know the role that free access to information plays in a democratic society. | Student gives credit for works used by quoting and listing references. Student is an ethical consumer and producer of information, and understands how free access to information, and free expression, contribute to a democratic society. | Student understands and recognizes the concept of intellectual property can defend him/her if challenged, and can properly incorporate the ideas/published works of others into their own work building upon them. Student can articulate the value of information to a free and democratic society, and can use specific criteria to discern objectivity/fact from bias/ propaganda. |

The CSU research shows, that, as information competence is one of essential parts of students' learning competence, the students are required:

- to know information sources;
- they should show knowledge of various search tools,
- they should show knowledge of various presentation tools.

They should be able to:

- choose the appropriate information source for a stated information need,
- access information from that source efficiently,
- evaluate the information relevance and quality.

Students should also be able

- to organize and synthesize the information and communicate it effectively;
- to appreciate the ever-increasing availability of information in all its various formats;
- to realize that information competence is a skill to be applied and developed throughout life;
- collaborative group work develops an appreciation for cooperative learning and problem solving.
- information competence is best learned and/or enhanced by "doing" (CSU Information Competence Project, 2001).

For our students informative competence is an integrated study programme element, and they are helped to develop their information competence not only by the teaching staff, but the librarians, as well. In the study programme „External Relations of Organizations", during „Introduction into studies", for 10 academic hours the students are trained how to use the library, data sources, electronical journals, to search for necessary information on the Internet. These skills are listed in the Key skills on information competence (Information Competence in the CSU, 1995): to use different technological devices for receiving information; to use, evaluate and interpret the information from mass media critically. These skills

are trained not by being taught, but „while doing". To train these skills the students work in the library, use data bases, LLU electronical catalogue.

To ensure students' information competence, it is important to constantly develop faculty information competence, which includes both, the teaching staff information competence development, and the faculty resource base provision and development.

Resource room, which is available at the Faculty of Social Sciences, under the requirements of the students, for the second year gives an opportunity to work there also on Saturdays. A successful result of an EU project, a computer room with 15 modern computers, in addition to the Resource room computers, is available also 6 days a week.

It is very important for the students to be well aware of the ethical and legislative information competence skills, the use of information as an intellectual property, author's rights and plagiarism. Especially these skills are necessary in their work with mass media information. In the Key skills on information competence (Information Competence in the CSU, 1995) these skills are defined as understanding of ethical, legislative and socio-political questions which deal with information and information technology.

The university should teach students to work with non-printed information. The External relations specialist should be able not only to find, analyze and synthesize information (which are the key skills of informarion competence), but create information by his own, and effectively present it in any possible way.

The External relations students are trained not only to use information, but also prepare different types of presentations. As the study programme is integrated, the students learn how to use information in a proper way during the whole study process, but there are study subjects which pay special attention to the information competence.

To understand better the specifics of mass information, the subject „Mass media" is included into the curriculum. Presentation skills are trained at „Rhetoric" seminars, as well as „Business communication" and other study subjects'. Students' information competence development is ensured not only by the lecturers–professionals, practical workshops and seminars are held in a specially designed and equipped rhetoric room and communication room, where the students see themselves on making presentations in the mirror, and their presentation is video recorded and then discussed in details. No doubt, the information competence achieved is seen best during bachelor papers defense, where the students demonstrante their information competence level in the full.

The 4 years of evaluating the students' bachelor papers defense and presentations prove good achievements in case of constant mutual efforts of the students and the teaching staff on the development of information competence.

## Discussion

Self-management and time management of students play an important role in their use of the Internet and the library, showing preference for the Internet resources for the reason of their easier and quicker accessibility in comparison with the use of library resources. Students' information competence development is ensured, if:

it is developed during the whole study programme acquisition;
all kinds of information are widely used in problem solving situations;
effective teaching technologies are used;
students learn how to find, evaluate and use information;
students are aware of the legislative and ethical information aspects;
students' competence development is based on needs analysis.

As information competence is one of the main in the life-long skills and competencies cluster, nowadays in many universities of the world it is considered to be the main higher education result (ACRL, 2000).

## Conclusions

Information competence is one of essential parts of students' learning competence. Finding, evaluating, using and communicating information in all its various formats and ways are the necessary components of information competence.

LLU 1st year students do not critically evaluate the sources they find and often prefer the Internet information to more serious material from books or journals for its easier format and accessibility. Often they are not aware of define the problem of the research and information needed.

The results of the investigation prove, that developing of the Information competence key skills, worked out by the Commission on Learning Resources and Instructional Technology (CLRIT), California University (Information Competence in the CSU, 1995), used as a basis at LLU with the students of External Relations study programme in the integrated study process for developing the students' information competence, give good results and prepare students for active life-long education.

## References

CSU. (2001). *CSU Information Competence Project*. Retrieved March 2, 2007, from http://www.lib.calpoly.edu/infocomp/project/expanded.html

Dreyfus H.L. & Dreyfus S.E. (1986). *Mind over Machine: the power of human intuition and expertise in the era of the computer*. Oxford: Basil Blackwell.

Dreyfus S. E., & Dreyfus H. L. (1980, February). *A Five-Stage Model of the Mental Activities Involved in Directed Skill Acquisition, Operations Research Center Report*. - 18 pp. Retrieved October 9, 2006, from http://stinet.dtic.mil/oai/oai?&verb=getRecord&metadataPrefix=html&identifier=ADA084551

CSU. (1995). *Information Competence in the CSU.* A Report Submitted to Commission on Learning Resources and Instructional Technology. Retrieved February 17, 2007, from http://www.calstate.edu/LS/Archive/info_comp_report.shtml

Association of College and Research Libraries (ACRL). (2000). *Information Literacy Competency Standards for Higher Education.* Retrieved January 24, 2007, from http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm#ilhed

Kozlowski, S. and Farr, J. (1988). An integrative model of updating and performance. In. *Human Performance*, 1, pp. 5 - 29.

Malpass R., Tredoux C., Schreiber C.N., McQuiston-Surrett D., MacLin O., Zimmerman L. and Topp L. *Study Space Analysis: A New Method For Describing And Evaluating Research Literatures*. Paper presented at the annual meeting of the American Psychology - Law Society, Mar 05, 2008. Retrieved March 3, 2009, from http://www.allacademic.com/meta/p229694_index.html

*Rubrics for Assessing Information Competence in the California State University*. (2002). Prepared by the CSU Information Competence Initiative. Retrived February 17, 2007, from http://www.calstate.edu/LS/1_rubric.doc

Schell F., Stolzenburg E., Theunert H. (1999). *Medienkompetenz. Grundlagen und pädagogisches Handeln*. München: Co Päd Verlag.

Turusheva O., & Turusheva L. (2007). Academic Skills as a Necessary Long-Life Education Skill. In. *Proceedings of the International Scientific Conference "New Dimensions in the Development of Society"*. June 14-15, 2007. Jelgava, Latvia, pp. 178-186.

Turusheva O., & Turusheva L. (2006). Students'Learning Skills as a Means of Integration into Learning Society. In. *International Scientific Conference "New Dimensions in the Development of Society*. Latvia University of Agriculture, June 15 – 16, 2006. Jelgava, pp.149 - 156.

*Adviced by Sarmite Bremze,*
*Latvia University of Agriculture, Latvia*

***Larissa Turusheva*** Master of Education, Lecturer at Latvia University of Agriculture, Jelgava, Latvia.
E-mail: larisa.turuseva@llu.lv, examinat@llu.lv
Website: http://www.llu.lv/