INFORMATION LITERACY TRAINING IN HIGHER EDUCATION AS AN INTRODUCTION TO LIFELONG LEARNING. THE NEEDS OF THE CURRICULUM REFORM

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Abstract *The article discusses the need to modify the curricula of ICT in higher education. Contemporary university students seem to function well in the world of new technology, however, they have problems when working with information, including the identification of information needs, the selection of search tools adequate to the task and evaluating information found on the Internet. The curriculum of ICT at universities very often focuses only on narrow technical aspects. There is a necessity to introduce a broad perspective covering the organization, planning and implementation of individual learning in a digital information environment. It is a very important part of the development of the information culture of the young generation and lifelong learning process.*

Keywords: information literacy, information literacy training, ICT, information culture

INTRODUCTION

Effectively using the digital information environment is key in the process of learning. It does not only concern formal learning, taking place at every level of general and higher education, but also, or even most of all, the process of self-learning in the context of lifelong learning and the requirements of the market.

The moment of graduating from high-school and going to college is especially important. Studying at a college is a time when young people take responsibility for their

personal education. During primary and high school it is the teacher who is the supervisor. He is responsible for the entire didactic process, he bears the responsibility for organizing the learning process, providing sources, textbooks and learning aids. A very important role of the teacher at higher education levels is preparing students for taking initiatives and organizing independent learning. The goal of academic institutions is to build curriculum for an individual learning process of the students which facilitates taking responsibility for their own professional development. The learning process is holistic and as a lifelong activity cannot be limited to school and institutionalized forms of learning, it has to break these boundaries and teach critical thinking as well as solving real problems (Information Literacy Competency …, 2000).

1. INFORMATION LITERACY IN THE LEARNING PROCESS

In order to fully use the rich technological potential in the learning process and to efficiently move around the digital information space it is necessary to acquire the appropriate training to work with such information, which may come in different forms. This training should include a broad-spectrum of information competences.

1.1 Standards of Information Literacy Competency

Information literacy is defined as *a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information* (Information Literacy Competency …, 2000; American Library Association, 1989). For the purposes of the higher education institutions certain standards have been established - standards for information literacy which modern students should have in today's knowledge society (The SCONUL Seven Pillars …,2011; Information Literacy Competency …, 2000).

Among the most important information competences in the process of learning and teaching at the academic level are:

1. searching for information in available resources:

   a. identifying potential sources of information and understanding the specifics (using different data formats);

   b. familiarity with basic and advanced search tools (popular search engines, Internet catalogs, public databases, resource catalogs in Deep Web, etc.);

   c. ability to use the search tools in a practical and efficient manner (using proper key words, using advanced search options - limiting the search field);

   d. building and implementing search strategies adapted to the search topic and discipline (using and combining specialized search tools to locate the needed information);

   e. using content aggregating systems (feeds and RSS readers) to find current data, follow information published within a specific discipline or issue;

   f. verifying the authenticity, topicality and reliability of the obtained results - critical assessment of the obtained information and its sources;

2. managing the content - organizing, categorizing and ordering information;

   a. archiving information (creating own information resources, bookmark lists and link to articles, web pages, databases etc.);

   b. tagging (creating a system of personal tags, using the Social Bookmarking service);

   c. using applications and services for managing works cited (Zotero, EndNote), creating databases of personal resources, organizing, creating theme catalogs, automatically downloading information form works cited databases, creating quotes and note databases;

3. presenting and publishing obtained information and self-studies

   a. shaping the information in a form suitable for the situation - text, visual, multimedia,

     - proficiency in using text editing software, spreadsheets and software for preparing multimedia presentations;

     - using image editing software and applications for audiovisual editing;

     - creating web pages, keeping a blog, using it for managing content (creating a personal e-portfolio), publishing self-prepared content on web pages and blogs;

   b. familiarity of the legal aspects of the availability and using information resources (content protected by copyright, such as Open Content);

4. communicating and sharing content with other participants of the learning process;

   a. using basic communication tools (e-mail, Internet communicators, VoIP services);

   b. participating in discussion groups and forums or commenting on web pages and blogs;

   c. being part of a team in a virtual environment (Google Documents, Zoho, SkyDrive, videoconferencing software, etc.).

1.2. Visual Literacy Competency Standards

One of the elements supplementing information literacy are visual competences which facilitate unimpeded exploration of the intricacies in the contemporary

communication-information systems. Developed in the form of standards for Higher Education (Visual Literacy Competency Standards for Higher Education, 2011) in the academic and science environment (The Association of College and Research Libraries, ACRL) were defined as a set of abilities which facilitate efficient searching, reading, interpreting, assessing, using and creating images. They supply the learner with tools which enable to understand and contextually analyze the visual cultural space based on ethical, aesthetical, intellectual and technical elements engaged in creating and using visual materials. The student, supplied with visual competences, is both a critical consumer of visual media and a competent participant of the information culture in the field of visual knowledge. Visual literacy are specific results of learning aimed at helping the students in undertaking efficient work using visual materials at the academic level. It should be based on the ability to use, share and create visual materials and raise the aesthetic and legal awareness of sharing and spreading visual information. In this form Visual literacy is one of the elements of the information competences of the contemporary society which combines information skills, interpreting, culture and visual communication with technical abilities in the field of using digital media (Visual Standards 2011, Wieczorek-Tomaszewska 2013).

1.3. Information competences and key competences

Among the eight key competences distinguished by the European Union which combine knowledge, ability and attitude considered necessary for the purposes of self-realization and development, being an active citizen, social integrity and employment, the information competences were mentioned next to the ability to learn. Information and communication technologies are considered as an important element of school education and are classified in the category of cross competences with an interdisciplinary character, so that they can be taught in parallel as a separate subject or constituting an interdisciplinary learning program (Rozwijanie kompetencji (*Developing key competencies*)…, 2013). This interdisciplinary status is scarce when implementing ICT topics and teaching information competences at the academic level.

1.4. Lifelong Learning and creating a personal learning environment

Currently, efficient moving around the dynamically developing digital educational content is determined by information competences. They are also a foundation for building a personalized educational environment.

Personal Learning Environment (PLE) is creating an individual establishment which functions as a system for organizing content and a network of social contacts from a learner's perspective, not from the perspective of a group or an educational institution. It is due to the process of learning which takes place in different contexts and situations and is connected with a raising awareness of the importance of informal learning. The concept is used for learning at home, school and workplace by solving problems or interacting with others; the key factor being choices, preferences and motives building the environment (Downes 2009, Kompen,

Edirisingha, Mobbs 2008, Pulak 2012). Other educational environments, through effortless updates and modifications, can play an important role in lifelong learning, especially with the dynamically advancing IT environment we face the need to constantly improve and acquire new IT skills.

Information competences can be viewed from a narrow and broad perspective. Narrowing down, they can be seen as a set of specific skills or features. From a broader perspective and a more complex approach the information competences can be seen as mutual relations and interactions, occurring between the information space and its user. In this field they include not only the knowledge of information and a set of skills but also a way of learning, an approach to learning that incorporates various aspects of information culture, conditions, contexts and styles (Bruce, Edwards, Lupton 2006).

2. THE NEEDS AND CURRENT STATUS IN THE FIELD OF ACQUIRING INFORMATION COMPETENCES IN LIGHT OF OWN RESEARCH

2.1 Goals, issues and methodology

The goal of the research was to diagnose the needs for the learning content implemented as part of the subject (course) *Information Technology* conducted by the students of pedagogical faculties.

What content type and scope, according to the respondents, should be part of the *Information Technology* course at pedagogical faculties?

How do the students assess their skills in the field of IT?

What is the share of using ICT in self-learning?

The research used an Internet survey which was available from October 2012 to January 2013. There were 228 filled forms in total. The research group included first year students of the pedagogical faculties on full-time and part-time studies at the Jesuit University Ignatianum in Cracow and the Pedagogical University of Cracow.

2.2 Research results

The results show great variety of needs among students. The most sought needs were related to ICT which would be helpful in future employment, including basic utility software. The topic of copyrights and license, especially in relation to typical educational activities was raised, for example using didactic materials (including multimedia) based on network resources, publishing and sharing such materials with students, etc.

Respondents assessed the role of school rather negatively in shaping Information Technology competences; 44% respondents stated that school did not prepare them or prepared very poorly (Figure 1).
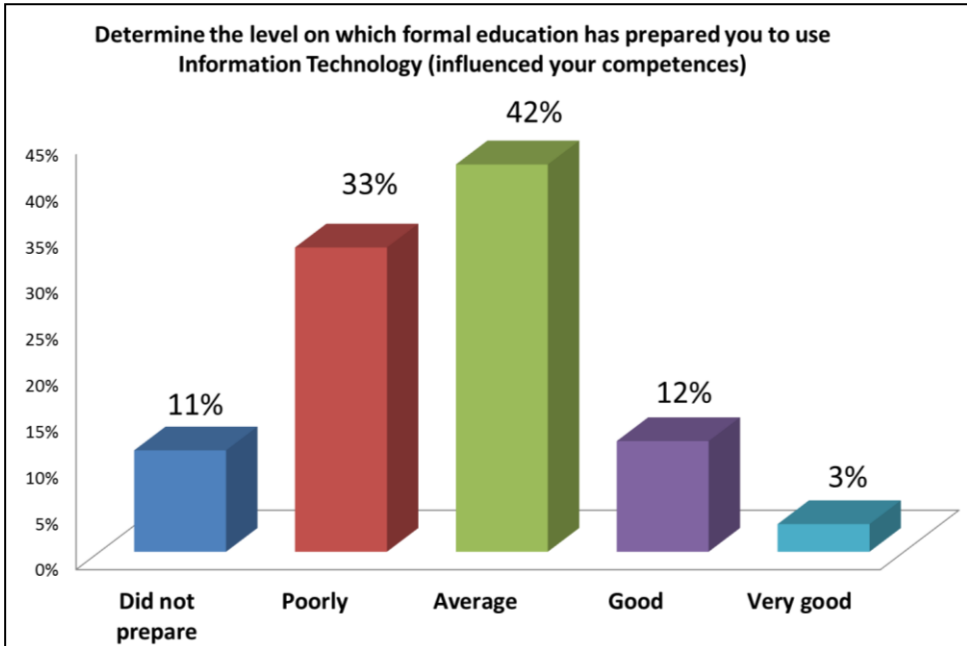
Figure 1. The role of formal education in shaping Information Technology competences
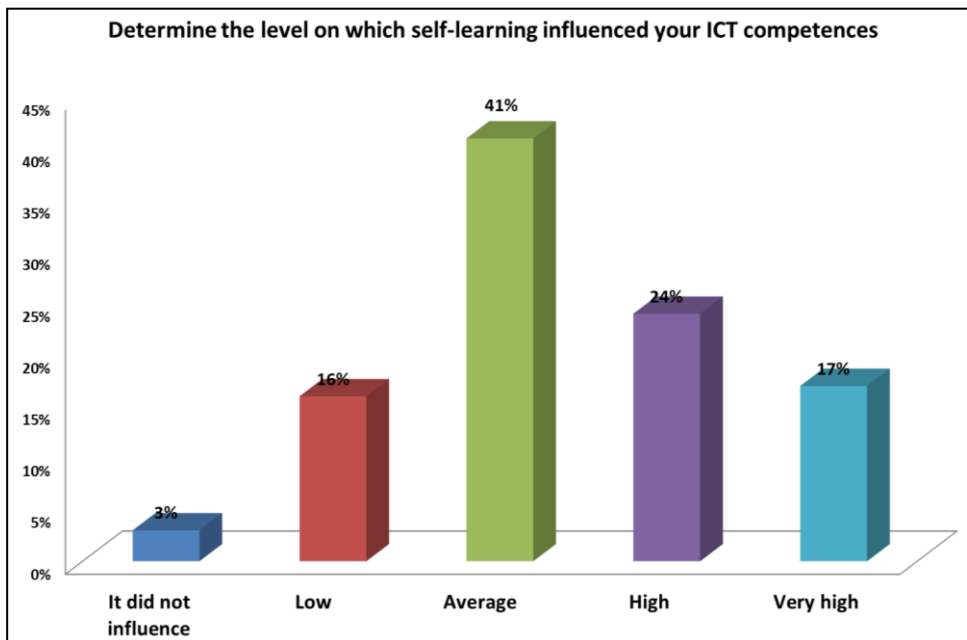
Source: own research

Figure 2. The role of self-learning in shaping Information Technology competences

Source: own research

However, a much bigger share was in the field of self-learning attitudes Over 40% of the respondents admitted that they gained their IT skills through self-study and personal experience (Figure 2).

The respondents were asked to assess their skills in specific fields. The list of obtained assessments is in Table 1.

Table 1.

Self-assessment of skills in individual fields of ICT

ICT fields	Low	Average	High
Editing and formatting texts (footnotes, tables, styles, automatic table of contents, signatures, etc.)	28%	63%	9%
Preparing multimedia presentations	11%	66%	23%
Making calculations and preparing lists in the spreadsheet, developing data in the form of graphs	39%	58%	3%
Using databases	64%	34%	2%
Designing and implementing web pages	83%	12%	5%
Effectively using search engines and Internet catalogs and other tools used in search for information	8%	50%	42%
Preparing graphic materials (image editing, preparing own work in popular graphic editors)	32%	54%	14%
Preparing audiovisual materials, recording and publishing videos and online recordings (YouTube)	65%	32%	3%
Social and legal aspects of the availability and using information (familiarity with copyrights, software licenses and content sharing)	68%	28%	4%
Socio-psychological phenomena related to using new electronic media (determined by using the computer and the Internet, safety and violence on the Internet, the specificity of electronic communication)	24%	59%	17%

Source: own research

The list of programs designed for editing, presenting and processing data usually used by respondents is in Table 2.

Table 2.

The most frequently used utility software

Program name	Percentage of users
Office programs	
Microsoft Word	91%
Microsoft PowerPoint	74%
Microsoft Excel	36%
Microsoft OneNote	4%
Microsoft Access	5%
Writer (OpenOffice)	18%
Impress (OpenOffice)	4%
Calc (OpenOffice)	4%
Works	5%
Programs for multimedia editing	
Picasa	55%
Photoshop	14%
Adobe Premiere Elements	14%
Gimp	11%
Corel Draw	5%
Audacity	3%

Source: own research

Among the programs used by the respondents on a daily basis is the Microsoft Office Suite which ranked first place (49% of the respondents used the 2007 version, 33% used the 2010 version, the rest used older versions or similar products.) Using different versions of the software at the university by the students proved that they often were not fully satisfied with the ICT course. The software used most frequently by the respondents is shown in Table 2.

Table 3.

Activity and Internet service which the respondents used

Type of service / activity	Never	Sporadically (less than once in a month)	Frequently (once a week)	Very frequently (every day or almost every day)

E-mail	0%	1%	35%	64%
Internet communicators (Skype)	13%	42%	18%	27%
I use tools for group work (Google Drive)	22%	41%	30%	7%
Social networking sites (Facebook, Nasza Klasa etc.)	2%	7%	8%	83%
Forums and discussion groups	25%	43%	29%	3%
I comment the content published on the Web	28%	27%	32%	13%
I read Internet magazines	38%	42%	16%	4%
I publish photos, create online albums	17%	51%	22%	9%
I watch movies on the Internet	5%	34%	46%	15%

Source: own research

Despite focusing on individualization, the learning process does not take place in isolation; the interaction with other individuals has significant value for its proper functioning. For communicating with other participants of the learning process traditional services may be used, such as e-mail, Internet communicators, chats, VoIP services, for example: Skype, groups or discussion forums. The usage level of communication tools by the respondents is shown in Table 3.

The respondents used team-work tools very rarely, for example Google Drive which facilitates not only online document editing but also effortless sharing of content with other web users - the participants of the learning process.

Currently, the social networking sites, such as Facebook, are the primary means of communication and sharing learning-related content. It is the development of Web 2.0 tools which became the key factor in popularizing the idea of a personal learning environment. One of the main advantages of the used technologies is their simplicity and flexibility. They do not require advanced IT knowledge, they can be easily used for gathering information and publishing personal content on the Internet, for learning from or with other users who have similar educational goals.

The research indicated low interest in creative skills among the respondents, such as managing personal web pages, co-creating and editing websites (5%), keeping a blog (13%), publishing videos on sites such as YouTube, for example I have my own channel (9%). Such lack of need for professionalism among students corresponds to the general lack in competences.

CONCLUSION

Currently, the implemented courses in the field of IT at pedagogical studies are seen as not completely adequate by the respondents to the requirements set by the digital multimedia environment, in which man functions on a daily basis.

The scope of the content and the organization of the topics related to information literacy at pedagogical studies requires a much higher level of individualization of the learning programs which would suit the needs of a specific student. Individualization should incorporate goals, content, form and methods of the didactic process. Young people starting at a university represent a diversified level of knowledge and skills. In order to level these differences it is essential to create a virtual learning environment which will allow for implementing individual learning goals with the help Internet resources and services. It would be advised to use the blended learning model more extensively and to develop a learning evaluation system which will allow for assessing individual differences.

Similarly to the lower stages of learning, the information competences should be implemented in the interdisciplinary form which incorporates a versatile scope of knowledge that constitutes the contemporary potential of the information culture.

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