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**BOBCATSSS 2010 @ Parma, Italy**

*Dates: Monday 25th, Tuesday 26th, Wednesday 27th January, 2010*

**Bridging the digital divide:  
libraries providing access for all?**

# MULTILEVEL SYSTEM OF INFORMATION LITERACY EDUCATION IN LATVIA

Case study

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**Abstract:** At present there is not general state level information literacy strategy in Latvia to meet the needs of the society. Due to this problem the main targets of the paper are as follows: 1) to characterize the indicators of information literacy skills in the society of Latvia; 2) to examine the system of information literacy education in Latvia; 3) to observe the best international practice in information literacy education and to indicate the directions of national development. The novelty of the proposed paper is recommendations for further development of the information literacy education system. The paper will support the elaboration of the state level strategy in information literacy, coordinating all institutions involved.

**Keywords:** information literacy, computer literacy, education system, general strategy, Latvia.

Information literacy is one of the main factors affecting the knowledge development in the modern society. Ability to retrieve, analyze, evaluate and use the existing information promotes individuals to achieve their personal, social and educational goals. This ability substantially affects an individual's quality of work.

European Union has defined the concept of 'lifelong learning'. It encompasses all the purposeful learning activities, whether formal or non-formal, undertaken on an ongoing basis with the aim of improving knowledge, skills and competences (EC, 2009b). Within the context of lifelong learning and the information continuum (from data to knowledge, and to wisdom), information literacy competency focuses on five broad abilities:

- 1) to recognize the need for information;
- 2) to know how to access information;
- 3) to understand how to evaluate information;
- 4) to know how to synthesize information;
- 5) to be able to communicate information (UC Library, s.a.).

The information literacy education can be analysed as multilevel system, considering the state level (e. g., general strategy), the institutional level (e. g., academic institutions and libraries involved), and individual level (e. g., adult individuals according to information needs). The targets of this case study are to characterize the current state of information

literacy skills in the society of Latvia, to analyse the achievements in information literacy education of Latvia, to observe the best international practice in information literacy education and to indicate the directions of development at the national level. This paper focuses attention on the following:

1. Interpretation of information literacy concept;
2. Statistical indicators reflecting the current situation;
3. Actors of education system in Latvia;
4. The existing international and national practice;
5. Further directions of development.

The paper analyses the information literacy education within the higher education and among non-academic adult population.

### **1. Interpretation of information literacy concept**

There are broader and narrower interpretations of the concept ‘information literacy’ (IL) in scholarly literature. The most frequently cited definition of IL that can be found in the literature is developed by the American Library Association (ALA) in 1989 (a broad and inclusive definition): “to be information literate, a person must be able to recognize when information is needed, and have the ability to locate, evaluate and use effectively the needed information” (ALA, 1989). It is also stated that IL is individual’s ability to define problems in terms of their information needs, and to apply a systematic approach to search, locate, apply, and synthesize the information, as well as to evaluate the entire process in terms of effectiveness and efficiency (Business Dictionary, 2009). The IL attributes mentioned in both the definitions have specific importance for non-academic environment and for higher education. They are: individual’s ability to locate and evaluate information, ability to apply a systematic approach (methodology) and synthesize information according to information needs. These attributes are taken into account when examining the content of curricula in higher education institutions, as well as the activities performed by public libraries in education of local community.

IL is closely related to information technology skills especially at present when information resources and access tools are increasingly based on digital technologies. As more digital technologies are spread, an appropriate level of IL education should be developed to ensure the people to be able to use these technologies. It is stated that “information technology skills (computer literacy) enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals” (ACRL, 2000).

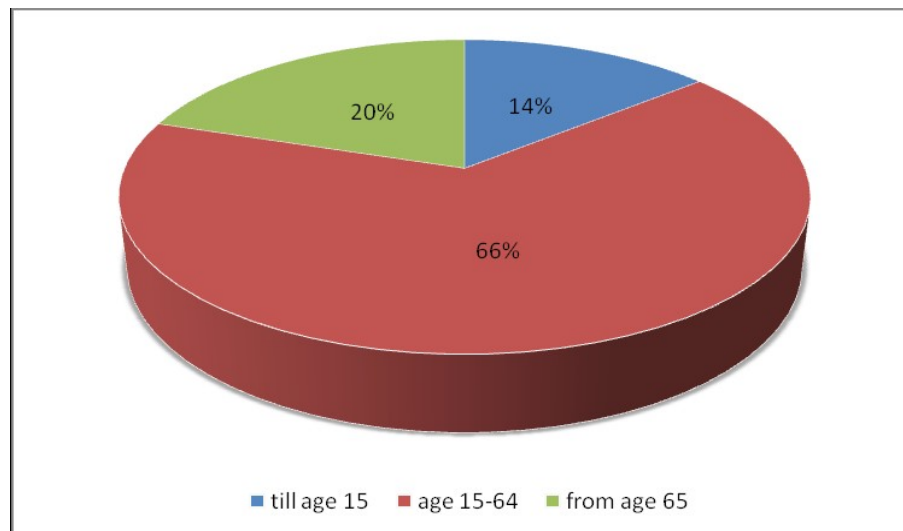
It is important to recognize the distinctions between ‘information technology (IT) skills’ and IL (‘information handling skills’). IT skills include: 1) basic skills (use of keyboard, mouse, printer, file/disk management); 2) standard software (word processing, spreadsheets, databases, etc.); 3) network applications (electronic mail, Internet, web browsers). Information handling includes, among others, information sources, evaluation criteria, navigation methods, manipulation techniques, and presentation issues (SCONUL, 2007a).

According to the previously mentioned definition information literate individuals necessarily develop technology skills. This statement is taken into account when we characterize the level of IL skills in society and the existing national practice in IL education both in formal and non-formal education.

## **2. Statistical indicators reflecting the current situation**

The current situation of information literacy skills in the society of Latvia can be characterized by several indicators, for example, the age and education level of inhabitants (the average user of information), the rate of internet users (among inhabitants as of age 15-74), the purpose of Internet use and methods chosen to obtain the necessary information technology skills (computer literacy), the self-evaluation of information literacy skills (by information professionals).

According to Latvia’s main demographic indicators (provided by the Population Register of the Office of Citizenship and Migration Affairs) there are 2.3 million inhabitants in the beginning of 2009. Within the given number there are 13.7% of resident population under the working age (until the age of 15; males 51.2%, females 48.8%), of the working age 66.2% of resident population (age 15-64; males 48.8%, females 51.2%), and over the working age 20.1% of resident population (from age 65; males 33.8%, females 66.2%). The statistical information shows that an average individual, who is seeking for information to participate in active social life and labour market, is a female person of working age (see *Figure 1*).



**Figure 1. Age of resident population in Latvia (2009; % of total population: n=2.3 million) (CSB, 2009a)**

When analysing the information on the educational level of population aged 15 years and over (according to the data of the recent population and housing census performed by the Central Statistical Bureau of Latvia in 2000 (CSB, 2000)), it is evident that 13.9 % have indicated to have the higher education level, 51.2 % – the secondary school level (1-12 grades). This fact should be taken into account when considering the state level strategy for information literacy.

The ability to retrieve information relevant to the everyday life needs is supported by the information and communication infrastructure. According to the statistical survey (November, 2009) 56% of households in Latvia have access to the Internet, and 62% (1.1 million) of inhabitants of Latvia (age 15-74) are the Internet users (TNS, 2009a). The average world Internet usage statistics (according to Internetworldstats.com) is 25.6% of the total population, but the average European usage – 52% of the total population (see Table 1).

*Table 1. Average world Internet usage statistics (IWS, 2009)*

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2009 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2009	Users % of Table
<a href="#">Africa</a>	991,002,342	4,514,400	67,371,700	6.8 %	1,392.4 %	3.9 %
<a href="#">Asia</a>	3,808,070,503	114,304,000	738,257,230	19.4 %	545.9 %	42.6 %
<a href="#">Europe</a>	803,850,858	105,096,093	418,029,796	52.0 %	297.8 %	24.1 %
<a href="#">Middle East</a>	202,687,005	3,284,800	57,425,046	28.3 %	1,648.2 %	3.3 %
<a href="#">North America</a>	340,831,831	108,096,800	252,908,000	74.2 %	134.0 %	14.6 %
<a href="#">Latin America/Caribbean</a>	586,662,468	18,068,919	179,031,479	30.5 %	890.8 %	10.3 %
<a href="#">Oceania / Australia</a>	34,700,201	7,620,480	20,970,490	60.4 %	175.2 %	1.2 %
<b>WORLD TOTAL</b>	6,767,805,208	360,985,492	1,733,993,741	25.6 %	380.3 %	100.0 %

The purposes of Internet usage among its users are as follows: 1) information retrieval and on-line services (94% of internet users); 2) communication (89% of internet users); 3) e-commerce and on-line banking (50% of internet users); 4) learning and education (34% of internet users) (TNS, 2009b). It is evident that the dominating purpose of Internet usage is information retrieval to solve every-day life problems. Nowadays situation is characteristic of information flood therefore critical analysis of information is the most important skill of a responsible information user, which should be perfected by improving IL skills. These facts should be taken into account when considering the education forms for information literacy, and when elaborating the content of IL education curricula.

An information literate individual can prepare a search plan, identify an information site, choose a source, apply modern technology, judge the usefulness of information, and use the acquired information. Analysis of IL of Latvia's information professionals is based on the self-estimation of librarians. One indication of the ability of information professionals to provide competent transfer of information is their self-estimation in regard to computer literacy and communication skills (KIS, 2008). A positive estimation ("very good" and "rather good") of their skills was made by over 90% of the respondents (aged 20-44); skills in using Internet search engines, by 96%; finding local government information on the Internet, by 96%; finding information provided by government institutions, by 93%; sending e-mails with attachments, by 91%; and advising library users on finding information on the Internet, by 90% of the respondents. Their own skills in working with the public and the media were also judged positively by the respondents, who claimed that they could "very well" or "rather well" form and maintain contacts with regular library users (95%), with potential users (92%), with the library's closest neighbors (90%), and with local government officials (77%). Generally, their own communication skills were judged positively by respondents aged 20-24

and 55-64. The high rating of the skills of information professionals is supported by the fact that users choose information institutions (and the information professionals employed by these) as the third most important information provider (next to the media and personal authorities). This means that the competence and skills of Latvia's librarians as information professionals are sufficiently good to participate in IL education.

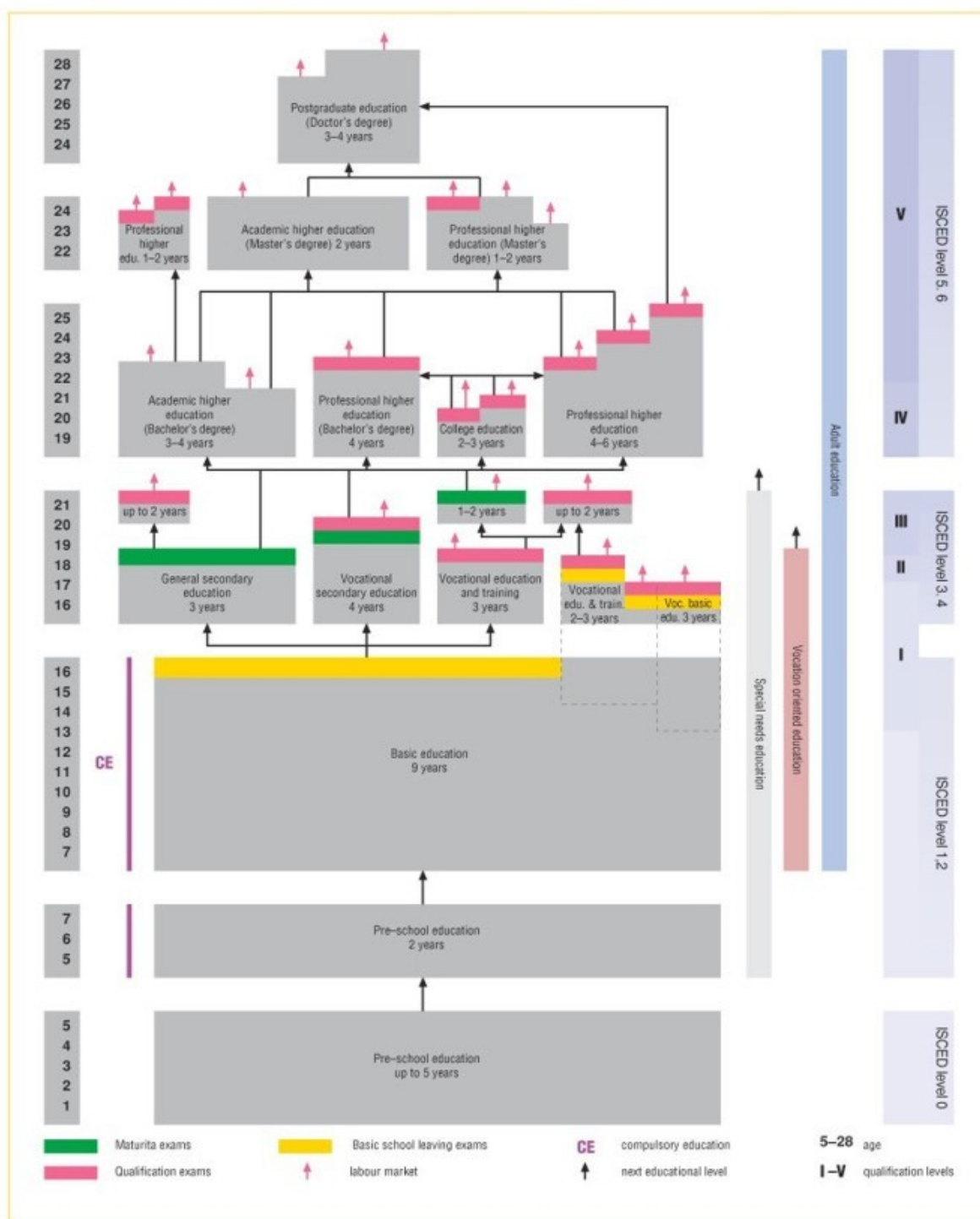
### **3. Actors of education system in Latvia**

It is stated that high quality pre-primary, primary, secondary, higher and vocational education and training are the basis of Europe's success. Lifelong learning must become a reality in Europe. It is a key to growth and jobs, as well as a chance for everyone to participate fully in society. The strategic framework, based on this statement, identifies four long-term (2010-2020) strategic objectives:

1. Making lifelong learning and mobility a reality;
2. Improving the quality and efficiency of education and training;
3. Promoting equity, social cohesion and active citizenship;
4. Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training (EC, 2009a).

“To achieve the goals on a sustainable basis, greater attention should be paid to raising the level of basic skills such as literacy and numeracy, making mathematics, science and technology more attractive and to strengthening linguistic competences. Education and training policy should enable all citizens, irrespective of their personal, social or economic circumstances, to acquire, update and develop over a lifetime both job-specific skills and the key competences needed for their employability” (EU, 2009).

The role of IL education can be seen both in the formal and non-formal education. (graduates receive a diploma recognized by the state in the formal education). There are five levels of learning institutions performing the formal education in Latvia: 1) pre-school education establishments; 2) primary schools (grades 1-6); 3) basic schools (grades 1-9); 4) secondary schools (grades 1-12; basic and general secondary education programmes); 5) higher education institutions and colleges (see Figure 2).



**Figure 2. Education system of Latvia (MES, 2009)**

Although the formal education is a substantial part of education system, at present the non-formal education and everyday-life-based (in-formal) training of job-specific skills become more important. The non-formal education process is performed by different educational institutions (the results are not approved by the state recognized diploma). The IL education within non-formal education and everyday-life-based training can be performed also by libraries (both academic and public) to enhance knowledge, skills and competence of target audience in information processing.



Development of the IL education can be analysed within each level of education system. The situation in higher education (universities and other higher educational institutions) and the adult education is presented in the paper. The state level general strategy is considered as the framework for IL education.

#### **4. The existing international and national practice**

##### ***International practice***

- **Information Literacy Competency Standards for Higher Education**  
(2000; The Association of College and Research Libraries) (ALA, 2000)

In 2000, the Association of College and Research Libraries (ACRL), a division of the American Library Association (ALA), released “Information Literacy Competency Standards for Higher Education”. The ACRL’s framework consists of five standards, performance indicators, as well as a range of learning outcomes linked to these performance indicators to enable the students to become information literate. These standards consider the best practices for the implementation and assessment of postsecondary IL programmes. The five standards are:

1. Standard One: The information literate student determines the nature and extent of the information needed.
2. Standard Two: The information literate student accesses needed information effectively and efficiently.
3. Standard Three: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. Standard Four: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. Standard Five: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

The ACRL Information Literacy Competency Standards are used to develop the strategy for information literacy education principles in Finland.

- **Curriculum plan for information literacy** (2004; Finnish University libraries)  
(Juntunen, 2008)

Finnish universities have implemented several projects in order to create standards and teaching aids promoting IL teaching and learning. The primary aim of the project

“Curriculum plan for information literacy: a joint virtual university project of the Finnish University libraries, 2004-2006” was to enhance integration of IL into the academic curriculum. The main objective of the recommendation was to ensure that at least a minimal level of IL training be provided to all students.

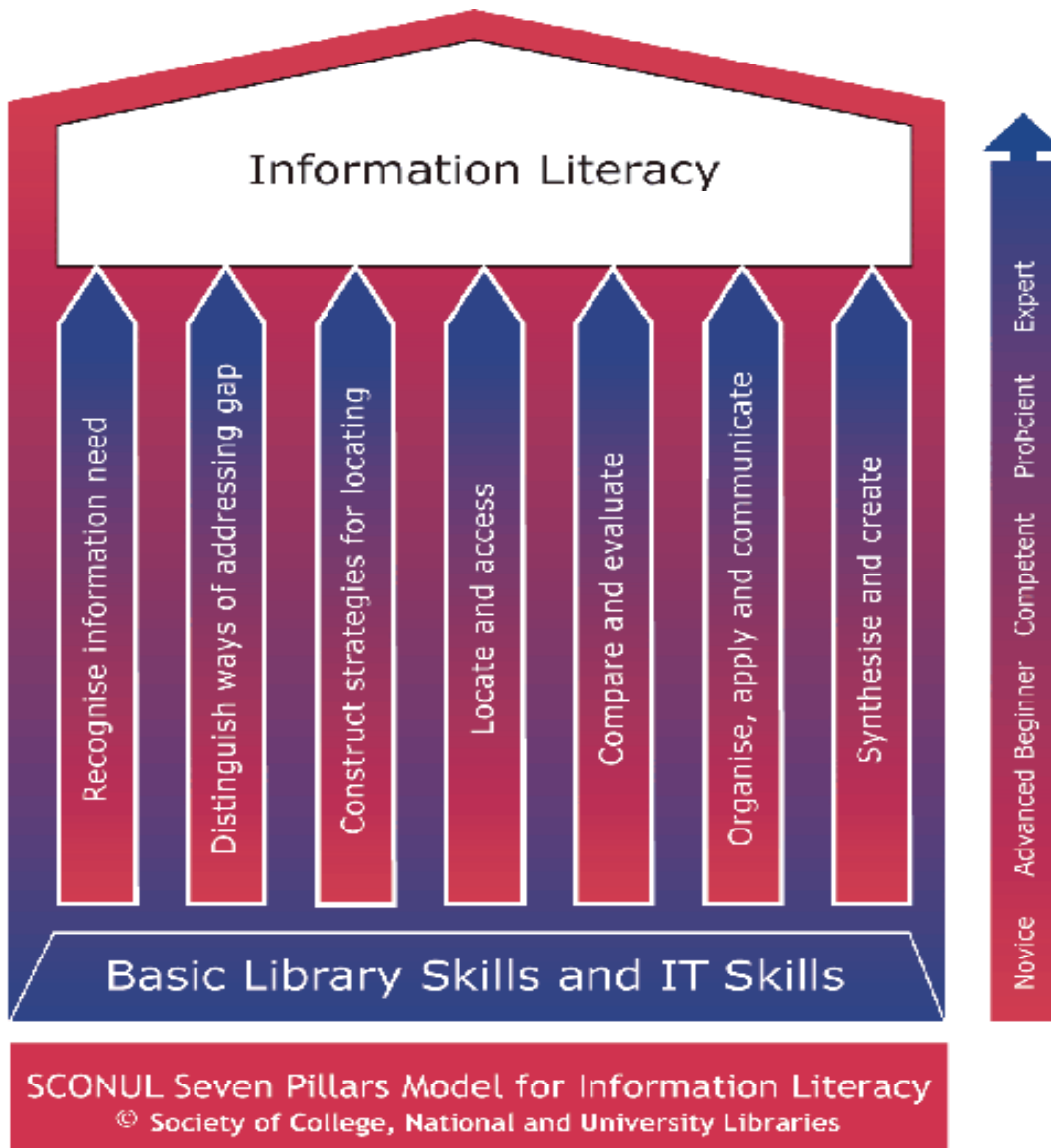
Within the project, a joint web site and a mailing list were created to increase IL visibility at the national level. One of the practical outcomes is also the “Question Bank: a joint tool for assessing information literacy skills”. The question bank consists of about 300 multiple-choice questions that university libraries can modify according to their needs, and use for testing the IL proficiency of students at different stages of their studies. Questions are divided into three levels of difficulty in accordance with national IL recommendation: 1) new students: basics in IL; 2) bachelor’s level studies: IL in intermediate level studies; 3) master’s level studies: IL in advanced level studies. Tests can be used: 1) to gather information about the students’ skill levels to develop better IL teaching methods; 2) to obtain a baseline for measuring a students’ information seeking skills (students can be redirect to teaching groups corresponding to their skill levels).

At the University of Tampere after degree structure reform in 2005, IL courses have also been obligatory in the curriculum of Information Science, Administration and Social Science. Students earn 2 ECTS credits for this course.

- **Information Skills model (Seven Pillars Model)**

(1998; The Society of College, National and University Libraries (SCONUL)  
(SCONUL, 1998)

SCONUL’s position paper on Information Skills in Higher Education was produced in December 1998 to initiate a debate on the role of information skills within the higher education environment. The resulting Information Skills Model is composed of seven information literacy competences (Seven Pillars Model; see Figure 3) supported by basic library and information technology (IT) skills.



**Figure 3. Seven Pillars Model for information literacy**

It is stated, that two building blocks of basic library skills and basic IT skills are at the base of the model. The seven headline skills and attributes, the practice of which leads from being a competent user to the expert level of reflection and critical awareness of information as an intellectual resource, appear between the base and the higher level concept of IL. The progression from novice to expert is indicated by an arrow. “The first year undergraduates will be mostly at the bottom of the arrow, perhaps only practising the first four skills, whilst postgraduate and research students will aim to be towards the expert end, and will be aspiring to the seventh” (SCONUL, 2007b).

### *National practice*

- **State level**

The Cabinet of Ministers of the Republic of Latvia has announced indirectly the importance of IL as one of the key qualifications of modern citizenship in today's information-based society.

#### **Latvia Information Society Development Guidelines (2006 – 2013)(IS, 2006)**

Short-term priority tasks: 1) to develop territorial coverage of access to information and communication (ICT) infrastructure; 2) to make ICT financially accessible for households; 3) to teach basic skills of ICT use to individuals and to promote them to use ICT; 4) to provide availability of public information to self-governments and commercial firms to create services and to develop centers, providing state administration services; 5) to introduce e-signature and develop the infrastructure for its use; 6) to support services accessible over the Internet, and creation of innovative and environment friendly products.

Long-term actions:

1. To develop users' skills and knowledge: 1) to update and complement ICT infrastructures at schools, to develop learning of Informatics at schools, creating multimedia educational aids and integrate use of ICT in teaching methods of other educational subjects. To optimize the functions of the educational system by tools of ICT.; 2) to conduct teaching of the basic ICT skills for people, to develop lifelong education and retraining using ICT.; 3) to teach ICT use for the target groups, including senior citizens, unemployed people, disabled people, representatives of national minorities, rural population, etc., to develop specific content, in accordance with the needs of these groups; 4) to inform society about the possibilities and new services, offered by ICT and to popularize them.

2. To develop services and content: 1) to form e-services of state administration and self-government. It will encourage the people to use e-services, will contribute to the development of users' skills and will activate the e-services market; 2) to support creation of digital resources and products (museums, archives, depositories of libraries, new media) and to create or purchase electronically accessible repositories of knowledge for the public; 3) to develop the quality of life service projects - e-health and e-education; 4) to inculcate the support instruments for the creation of new services content and for support of e-commerce, as well as for the creation of multiplatform content in the future.

It is evident, that in the guidelines for the development of information society the attention is more focused on computer literacy which is only a part of IL education.

## **Political Guidelines of Lifelong Learning (2007 – 2013) (MES, 2008)**

In the development process of modern society the use of knowledge, and competences that are demanded in the labour market change rapidly. Therefore more important along the formal education become the non-formal education, and everyday life-based adult education independent of their age or formal education level obtained before. Formal, non-formal and every-day based education are with equal importance in lifelong education, they complement each other, and broaden the education environment. As result the new models of social relationship develop in the education environment. The needs of an individual in education, culture, economic and social life become nearer accordingly to changes in everyday life.

In the political guidelines the main attention is paid to adult education, which is the weakest part of the education system in Latvia, and is not clearly represent in legislation. In this context the more important is the non-formal education. It is stated, that the non-formal education can provide the new knowledge, skills and competences according to the needs of employers and employees in rapidly changing conditions of labour market and new technologies.

The political guidelines state that there is lack of normative basis for adult education in Latvia. There is not appropriate coordination between institutions involved either. It is necessary to set the long-term programme of adult education as precondition for development of human resources and for effective financial investments in Latvia.

The main problems of adult education in Latvia are as follows: 1) till present there are not tools to acknowledge the skills and competences obtained within non-formal education; 2) lack of lifelong learning governing system on national and local level; 3) weak cooperation between ministries, non-government organizations and social partners; 4) lack of normative basis and financial mechanism.

- **Institutional level**

- Academic institutions*

According to statistical data there are 60 higher education institutions and colleges in Latvia (CSB, 2009b). Our paper focuses attention on the higher educational institutions and their programmes, and on the role of academic libraries in IL education process. To characterize the current situation in IL education within higher educational institutions, the regular curricula were analysed. Some examples are explained.

At the end of the 90ies within the project “Dedicate” information literacy teaching subject was developed for the 3<sup>rd</sup> year bachelor students of the Faculty of Materials Science and Applied Chemistry, as well as for the 2<sup>nd</sup> year bachelor students of the Faculty of

Electronics and Telecommunications at the Riga Technical University (<http://www.rtu.lv>). In both cases information literacy education is a result of project-based activities, as well as it is integrated into the lectures on teaching subject. The teaching process is performed by staff of the Riga Technical University Scientific Library.

At the University of Latvia (<http://www.lu.lv>) the questions on information literacy are integrated into the courses of regular curricula such as “Introduction to studies and research” (Faculty of Social Sciences), “Introduction to studies and research methodology” (Faculty of Theology), “Introduction to studies” (Faculty of Economics and Management). Students obtain skills to carry out research, to find, to evaluate and to use appropriate information resources. Students are trained to use adequate academic writing style, to apply appropriate reference methodology. According to the course plan the lectures are delivered by lecturers or by the staff of the Library of the University of Latvia. The courses at the above mentioned faculties are mandatory for the 1<sup>st</sup> year bachelor students (part A), and students earn 3 ECTS.

Elements of information literacy education are integrated (of different grade) into courses of both bachelor and master level at the Stockholm School of Economics in Riga (<http://www.sseriga.edu.lv>), Daugavpils University (<http://du.lv/en>), Rezekne Higher Education Institution (<http://www.ru.lv>), Ventspils University College (<http://www.venta.lv>), Riga Stradins University (<http://www.rsu.lv>). The courses are taught in 1-2 faculties both by lecturers and library staff (they are both mandatory and optional).

An outstanding example is the Bank of Latvia School of Business and Finance (<http://www.ba.lv/en>), where the courses “Introduction to studies” (for the 1<sup>st</sup> study year) and “Introduction to research methodology” (for the 2<sup>nd</sup> study year) with elements of information literacy education are mandatory for bachelor students in all programmes. The courses provide competences of information retrieval in bibliographic information resources (catalogues, databases), usage competences of scholarly literature (citation practice, academic ethics, reference models), as well as skills to identify, select, compare and analyse information needed to produce a synthesis which provides a new perspective, and enable creation of new knowledge.

### *Public libraries*

It is stated that basic literacy (reading, writing and performing numeric calculations and operations) is learned in basic and secondary formal education primarily in all societies. Historically the practice of teaching IL skills has been largely restricted to the context of

higher education (Rader, 1999). Recent activities are focused both on computer literacy and IL education in public libraries in Latvia.

In 2006 the signing of an agreement between Latvia's Ministry of Culture and the Bill and Melinda Gates Foundation in November 2006 launched the *Father's Third Son* (3td) Public Library Development Project (KIS, 2007).

With the available funding, the project, among others, has produced the following outcomes of infrastructure enhancement: 1) approximately 4,000 fully equipped computers and 956 multifunction devices for copying, printing, scanning have been installed in all 874 libraries in Latvia (an average of three new computers and one multifunction device for each public library); 2) equipment was installed in 874 libraries to provide wireless access to the Internet (use of Internet and computers free of charge); 3) librarians were trained to work with computers and provide support for users; 4) special computer hardware and software for visually impaired library users has been supplied. The 3td project affects all municipal public libraries in Latvia and 70% of Latvia's population (80% of the computers have been installed in libraries that service less than 10 000 inhabitants).

It is necessary to stress, that one of the most important 3td project outcomes is training. In order to encourage usage of technologies and to give basic computer literacy to local community, librarians got extensive training consisting of 8 different modules that were focused on IL education. Librarians were trained for 140 academic hours, among others, in the subjects: 1) innovative actions; 2) role of libraries in knowledge society and planning of library development; 3) topical challenges of lifelong education; 4) efficient teaching methods; 5) users' research. Within the 3td project high quality training programmes were also developed. The added value of these programmes is an intensive focus on practical guidelines and instructions, as well as realistic examples of the effective usage of the skills (Paberza, 2009).

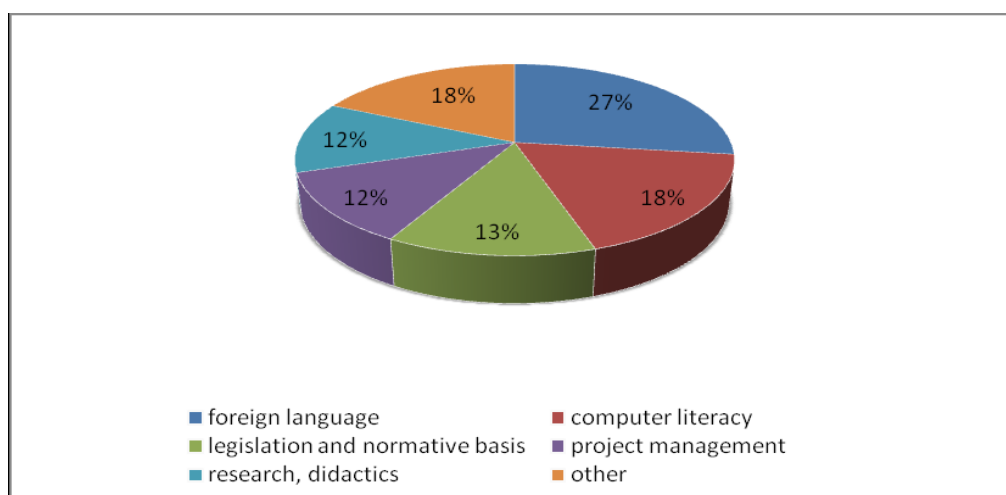
### ***Individual level***

Individuals with basic IL education usually strive to develop their skills. Ability to operate information successfully affects position of adult population in the labour market and its integration into society. The training of IL skills and competences is essential at present economic situation with extremely high rate of unemployment.

According to registers of the General Registry Office of Latvia the rate of unemployed people in the 3<sup>rd</sup> quarter of 2009 was 18.4% of the total number of economically active population (employed population refers to persons aged 15-74 years) (CSB, 2009c).

The main reasons why individuals are not able to find a job (according to inquiry) are as follows: 1) inadequate salary (38%), 2) distance from the living place (29%); 3) lack of appropriate education (24%); 4) lack of information on vacancies (22%), 5) lack of computer literacy skills (15%) (AEC, 2007a). According to demands of adult population the IL education (including improvement of computer literacy skills) should be a part of re-qualification process.

In the situation of high unemployment, we can observe the growth of participation in adult education process: 25.9% of men and 38.9% of women population in Latvia are participants of both formal and non-formal education. The competences that would be important for the participants (according to inquiry) are as follows: 1) foreign language (mostly English) (27%), 2) computer literacy, programming (18%); 3) legislation and normative basis of social activities (13%), 4) project management (12%); 5) research, didactics (12%) (see Figure 4) (AEC, 2007b).



**Figure 4. Competences important for economically active population (age 15-74)**

The afore-mentioned competencies important for economically active population correspond to key competences for a changing world set up by the Commission of European Communities: “Creating a well-functioning ‘knowledge triangle’ of education, research and innovation and helping *all* citizens to be better skilled are crucial for competitiveness, growth and jobs as well as for equity and social inclusion. [...] Education and training systems must therefore become much more open and relevant to the needs of citizens, and to those of the labour market and society at large. The European Framework for Key Competences for Lifelong Learning, identifies and defines 8 key competences necessary for personal fulfilment, active citizenship, social inclusion and employability in a knowledge society:



1) communication in the mother tongue; 2) communication in foreign languages; 3) mathematical competence and basic competences in science and technology; 4) digital competence; 5) learning to learn; 6) social and civic competences; 7) sense of initiative and entrepreneurship; 8) cultural awareness and expression. Adult education and training should give real opportunities to all adults to develop and update their key competences throughout life” (EP, 2006).

### **Conclusions**

The issue of IL education is very important in Latvia for two reasons: 1) the state level activities are performed to harmonize the lifelong learning system; 2) the adult education is crucial in current situation of high unemployment. IL education can be considered as a part of every level in lifelong learning system.

The statistical surveys and inquiries of population show that inhabitants of Latvia are active Internet users seeking for information to solve the everyday life problems. The competence and skills of Latvian librarians as information professionals are sufficiently good to participate in IL education. In the current situation characterized by IT development and information flood, it is necessary to develop computer literacy and information literacy skills simultaneously; the ability to choose effective strategy and to evaluate information is the essential skill of a responsible information user.

The IL education within non-formal education and everyday-life-based training can be performed by libraries (both academic and public) to enhance knowledge, skills and competences of target audience. The development of IL at higher educational institutions is a major challenge to university libraries (national standards and evaluation models are needed in this work). Finland can be viewed as a model of success in making the political decision-makers aware of the importance of IL education.

There are the state level IL education standards and programmes, evaluation tools, and teaching materials in virtual learning environment in the international practice. There is not the state level programme coordinating the cooperation between education institutions and libraries in the national practice. The IL education activities are a part of regular curricula in higher education (both mandatory and optional), but they are heterogeneous within individual universities and other higher education units. Even though IL had frequently been featured in the stated strategies of universities, there was a distinct need to define common standards to promote the integration in practice. The IL education activities are also a part of project (mostly short time) activities within local communities, which is not sufficient for sustainable development. The quality of IL education depends on local initiative and on individual motivation.

## **5. Further directions of development**

Based on the analysis of such aspects as: 1) main population indicators, 2) curricula of higher educational institutions, 3) project based activities in public library sector, 4) international practice, the following recommendations can be made:

1. To develop the state level strategy or IL education, defining the competences of institutions involved, cooperation among them, and the general qualification framework within European strategy and cooperation in education and training.
2. To develop the IL standard and evaluation methodology for assessment of IL skills according to international practice.
3. To develop the standard for implementation of IL education programmes in lifelong learning system to ensure, that at least a minimal level of IL training is provided to all students.
4. To create a web based teaching aids and evaluation tools for both self-assessment and examinations (courses and teaching packages have been crucial in the achievement of cooperation between the library and university).
5. To develop a web based forum (portal) of IL education promoting professional discussions and knowledge exchange.
6. To involve libraries (both academic and public) into EL education process (creation of standards according to which librarians and libraries can evaluate all forms of information literacy).
7. According to demands of adult population, the IL education should be a part of re-qualification process. It can be performed as a form of distance learning, offering choice to learners what to learn, where, when and how to learn. It provides better individualized support so that the learners can learn in a way that suits their needs.
8. To promote the importance of pedagogical training for librarians, organizing several information literacy seminars and peer meetings.

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