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ISTITUTO DI RICERCA SULL'IMPRESA E LO SVILUPPO

The Observatory on Information Literacy Policies and Research in Europe

edited by
CARLA BASILI

Consiglio Nazionale delle Ricerche

Roma 2009

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Massimo Cannatà

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Foreword

Massimo Cannatà[1]

In 1775 Samuel Johnson gave some indication of the existence of two types of knowledge:

> Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it. [2]

What was once an alternative, today, in the so-called Information Society, is a pressing need: to know how to find, evaluate and efficiently use information is a crucial variable, an essential and decisive element for scientific progress, competitive advantage, democratic citizenship and, not last, cultural development.
Among the objectives of the World Summit on the Information Society, it is fundamental to make information and knowledge accessible to every individual in the world, after having recognized the importance of information and knowledge in every field of human life. In fact, the first article of the Declaration of Principles states:

> Art. 1 of the Common Vision of the Information Society
> We, the representatives of the peoples of the world, assembled in Geneva from 10-12 December 2003 for the first phase of the World Summit on the Information Society, declare our common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where **everyone can create, access, utilize and share information and knowledge**, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights[3].

In the same Declaration, the concept is further stressed in the article 24, as follows:

> B. An Information Society for All: Key Principles
> B3) Access to information and knowledge
> Art. 24. The ability for all to access and contribute information, ideas and knowledge is essential in an inclusive Information Society.[4]

The universal access to information is also among the fundamental principles at the basis of Unesco's engagement for a Knowledge Society and thus it is declared:

> No society can claim to be a genuine Knowledge Society if universal access to knowledge and information is denied. By access we imply: infrastructure and connectivity; content; affordability; **information literacy**; know-how for use and development; education; and the free flow of information, opinions and ideas.[5]

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[1] Italian National Research Council. Ufficio Programmi di Formazione Cofinanziati - Rome, Italy
[2] Boswell, James (1791), *The Life of Samuel Johnson.*
[3] World Summit on the Information Society (2003), *Declaration of Principles. Building the Information Society: a global challenge in the new Millennium* [WSIS-03/GENEVA/DOC/4-E]. Geneva: WSIS, 12 December 2003 <*http://www.itu.int/wsis/docs/geneva/official/dop.html*>.
[4] *ibid.*
[5] Longworth, Elizabeth. UNESCO's Communication and Information Sector, *Welcome message to the online version of the UNESCO's stand at the World Summit on the Information Society in Tunis.* December 2005.

The political-institutional declarations are reinforced by the voice of that part of the scientific community that has devoted itself to the detailed analysis of the Information Society; the proof of this is the huge amount of scientific literature which has been written until now about the topic. Castells in particular, in his trilogy *The information age: economy, society and culture*, insists on the assumption that we live in a post industrial society, where our well-being is generated essentially through the creation and use of *knowledge*, which is transmitted in the form of *information*[6].

However, these and other influential voices still find little response in national educational policies in Europe where the extent of technology and the emphasis on contents are surely regarded more urgent compared to the development of competences and skills able to take effective advantage of the contents which today ICTs can easily convey.

This can be rightfully called *the era of competence* and no longer exclusively the era of knowledge[7]. The birth and the quick diffusion, in the past twenty years, of the so-called "transversal" technologies, such as electronics, computer science, telecommunications, and nanotechnologies, require diversified skills which do not belong to a single sector: therefore they should be learned through an adequate *education to information* in order to strengthen the push towards interdisciplinarity.

Innovation, technology transfer, competitiveness: these are the key terms that bring the concept of change into professions of the next generations, who will have the duty to move advanced societies towards quality standards which will be continuously changing, and towards knowledge that is becoming more and more interdisciplinary; the overall aim is to meet the scientific and entrepreneurial needs, which are clearly oriented towards a supranational and specifically European setting.

Therefore, no more strict cognitive divisions concerning disciplines which are rigidly sectional. On the contrary, what Europe needs today is a methodological approach, and a systematic education to scientific information, regarded as one of the pillars for the development of cognitive interdisciplinary universes.

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[6] Castells, Manuel, *The Information Age: Economy, Society, and Culture*. Oxford: Blackwell Publishers (three volumes): Vol. 1: *The Rise of the Network Society*. 1996; Vol. 2: *The Power of Identity*. 1997; Vol. 3: *End of Millennium*. 1998.

[7] Trattoli, Luca (2007), Oltre la conoscenza, l'era della competenza. *Area Magazine, 36* (March 2007), p. 2-5.

Information Literacy Policies in Europe: a framework for analysis

Carla Basili[1]

Abstract

It is commonly recognised that policy decision-making about a given phenomenon strongly relies on indicators that have been suitably defined to provide a measurable picture of the phenomenon in question. To date, the analysis of Information Literacy (IL) policies in Europe is lacking in certain aspects and the task of comparing IL policies in the different European countries cannot be other than qualitative.

Starting from the data obtained from the EnIL European Observatory on IL Policies and Research, the paper provides a common reference framework for analysing and comparing IL policies and research in European countries.

The proposed framework complies with the design criteria of the EnIL Observatory, launched by the author in 2006.

Keywords: Information Literacy - Policy Indicators - Academic Policies - Europe

The Information Literacy concept over three decades

A major priority of the Information Age is the goal of achieving Universal Access to Information. This goal has been pursued for a long while, since the seminal work by Tom Wilson on behalf of Unesco aimed at defining guidelines for developing national information policies[2].

We can identify three major dimensions of the problem concerning Universal Access, according to what we call the "3C model". The main axes along which an efficient information policy articulates are:

- *connectivity*: measures aimed at ensuring a capillary structure – both institutional (for example, the libraries in a country) and technological (for example, the Internet) – acting as a "conveyer" (or distribution network) of information to every citizen;
- *content*: measures aimed at ensuring that reliable information is conveyed to "connected" users;
- *competencies*: measures aimed at ensuring that "receivers" are able to efficiently retrieve and fully exploit the conveyed information.

Elsewhere (Basili, 2003), we have already underlined that until now the third "C" has been neglected in European Union policies and that diffusing information literacy is a requirement of today's Information Society (Basili, 2007).

1974: Information Literacy as a policy issue

The origin of the "Information Literacy" concept dates back to 1974, when Paul Zurkowsky, then president of the Information Industry Association, coined the term suggesting that:

> [...] the **top priority** of the National Commission on Libraries and Information Science should be directed toward establishing a major **national program** to achieve **universal information literacy** by 1984 (Zurkowsky, 1974)[3].

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[1] Italian National Research Council. Ceris Institute - Rome, Italy

[2] Wilson, T.D. (1981), *Unisist Guidelines for Developing and Implementing a National Plan for Training and Education in Information Use*. Preliminary version. Paris: Unesco.

[3] Zurkowsky, P. (1974), *The information service environment: Relationships and priorities*. Washington, DC: National Commission on Libraries and Information Science. Government Printing Office (ED 100391- Eric Clearinghouse).

In the statement by Zurkowsky some points should be noted:
1. the "**business**" origin of the term, since Zurkowsky was representing the information industrialists of the time;
2. the qualification of information as an **economic good**, that has **value** to people and can be sold at a certain price in the marketplace (as the existence of the Information Industry Association demonstrates);
3. the **policy dimension** of the concept: the statement clearly mentions Zurkowsky's hope that a national program would be started, aimed at achieving universal information literacy within a decade. Therefore, the Information literacy concept was originally characterised as an intervention having a political matrix.

1989: Information Literacy as a skill

Despite its business, economic, and political imprinting, the IL problem has been entrusted to academic libraries and mainly dealt with as a competency to be spread and diffused among library users.

As a result, today we are presented with a vast amount of literature having a "library matrix" that discusses IL as a particular **skill**, according to the following 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. The information literate individuals are those who have **learned how to learn** (American Library Association, 1989).

An important precursor of this definition is the work of Winkworth[4] as cited in (Wilson, 1981):

> Winkworth offers a categorization of information skills in a survey of user-education in schools which can be adapted to other systems. The categories and contents are shown in Table 1, which is reproduced from Winkworth's report.

Winkworth's table distinguishes the following steps in the research process:
- Define subject
- Locate information
  - Locate material in library
  - Locate information in material
  - Locate material outside library and school
- Select information
- Organise information
- Evaluate information
- Communicate results.

It is remarkable that as early as 1977 Winkworth laid out the basic model for most of the IL competency standards, syllabi and tutorials currently available.

Information Literacy as a graduate attribute

The ALA 1989 definition has given rise to a number of standards, which, in turn, have had a great impact on the Higher Education sector.

In the USA the *ACRL IL standards for Higher Education*[5] were defined in 1999 by the Association of College and Research Libraries (ACRL) and translated into: Finnish, French, German, Greek, Italian, Spanish, Chinese, Japanese, and Iranian.

[4] Winkworth, F.V. (1977), *User education in schools: a survey of the literature on education for library and information use in schools.* London: The British Library. Research and Development Departments (BLRDD 5391 HC).

[5] *www.ala.org/acrl/ilcomstan.cfm.*

In Australia, the Australian and New Zealand Institute for Information Literacy released the second edition of the *Australian and New Zealand Information Literacy Framework*[6] in 2004.
The educational philosophy underpinning the Australian IL standards strongly promotes the idea that IL should be tightly integrated into teaching and learning activities. The standards suggest that all academic curricula be reformed in line with its recommendations as a matter of university-wide policy.
A major policy parameter in the assessment exercise of Australian universities is the set of graduate attributes that each university must declare in its mission statement. According to Barrie (2004):

> ... generic graduate attributes in Australia have come to be accepted as the skills, knowledge and abilities of university graduates, beyond disciplinary content knowledge, which are applicable to a range of contexts. It is intended that university students acquire these qualities as one of the outcomes of successfully completing any undergraduate degree at university.

Furthermore, Barrie refers to the definition by the HE Council of 1992, from which most of the definitions for "graduate attributes" derive:

> These are skills, personal attributes and values, which should be acquired by all graduates regardless of their discipline or field of study. In other words, they should represent the central achievements of higher education as a process. (HEC, 1992, p. 20)

The commitment to skill development of graduate attributes has been adopted by the European Union policies on Higher Education under the name of "learning outcomes" and officially recommended in 2005 at the meeting in Bergen of the Ministers of the Bologna Process signatory states. The Bergen Communiqué, in fact, officially adopted the "Standards and Guidelines for Quality Assurance in the European Higher Education Area". The Guidelines – produced by the European Network for Quality Assurance in Higher Education (ENQA)[7] – recognise the fundamental role of the learning attributes approach in achieving transparency and comparability of competencies within the European Higher Education Area.

2005: Information Literacy and Lifelong Learning

Increasingly, IL has been conceived as a milestone for the lifelong learning goal. The Alexandria Proclamation states that:

> Information literacy empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion in all nations. *(Unesco-Ifla Alexandria Proclamation,* 2005)

and was released as the final document of the High Level Colloquium on Information Literacy and Lifelong Learning held in Alexandria, Egypt, on 6th-9th November 2005.
It is one of many contributions and we refer to the specialised literature on the matter for a deeper understanding of the synergy between information literacy and lifelong learning[8].

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[6] *http://www.anziil.org/resources/Infolit2ndedition.pdf.*
[7] ENQA (2005), *Report on Standards and Guidelines for Quality Assurance in the European Higher Education Area.* Helsinki ENQA.
[8] Candy, P. (2002), *Lifelong Learning and Information Literacy.* Available online:
http://www.nclis.gov/libinter/infolitconf&meet/papers/candy-fullpaper.pdf. Accessed on October 8th 2008.
Kuhlthau, C. (1999), *Literacy and Learning for the Information Age.* In: Stripling, B. [ed.] (1999) / Learning and Libraries in an

Information Literacy: three perspectives of analysis

There has been a large amount of speculation in order to define the IL concept with different *foci*, including critical thinking, informed learning, and functional literacy, among many others.

In order to help systematising this issue, we recently proposed the distinction among three different perspectives of analysis for Information Literacy[9]:

a) Socio-political perspective: analysis of Information Literacy as an educational policy goal (Education to Information);
b) Disciplinary perspective: analysis of Information Literacy as a form of study of information (Culture of Information);
c) Cognitive perspective: analysis of Information Literacy as a form of personal competence (Information Skills).

Basili (2007) illustrates in detail each of the three perspectives as well as their motivations and implications:

> [...] we strongly believe that coherent pragmatic decisions can derive from coherent theoretical premises. [...] In fact, our conviction is that the lack of a separation between different "stratifications" of reasoning represents one of the main causes of confusion about IL discourse and, consequently, that this obscures the way towards concrete and coordinated policy measures. (Basili, 2007)

Furthermore, each of the three IL perspectives is among the research activities addressed by the European network on Information Literacy (EnIL)[10].

The European network on Information Literacy and its research agenda

The European network on Information Literacy is a research project started in 2001 by the Italian National Research Council, with the aim of adopting a common research agenda and sharing results among IL researchers in Europe[11].

To date the network includes IL experts from research and academic institutions in: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Slovenia, Spain, Sweden, and the United Kingdom. The network will be further enlarged to include all EU27 countries.

The main research issues addressed by the EnIL network are:

- *Policy awareness*: to what extent is IL a national policy issue in the different European countries?
- *Higher Education Policies*: What are the academic policies related to the integration of IL into university curricula?
- *Best practices*: what is the best implementation model of IL in Higher Education?

Information Age: Principles and Practices - Libraries Unlimited; Teacher Ideas Press: Eaglewood, Colorado, p. 3-21 [Principles and practices series].

Lau, J. (2006), *Guidelines on Information Literacy for Lifelong Learning*. Available online: *http://www.ifla.org/VII/s42/pub/IL-Guidelines2006.pdf*. Accessed on October 8th 2008.

Rader, H. (2002), Information Literacy 1973-2002: A Selected Literature Review. *Library Trends*, *51*(2), p. 242-259.

[9] Basili, C. (2007), *Theorems of Information Literacy*. In: Proceedings of the Conference The Information Literacy Landscape, Belgrade, Serbia, 5th-7th October 2007.

[10] *http://www.ceris.cnr.it/Basili/EnIL/index.html*.

[11] Basili. C. (2004), *Le Réseau européen pour la culture de l'information (EnIL): vers une approche commune dans l'Union européenne pour promouvoir l'usage de l'information*. In: 3èmes Rencontres FORMIST, June 12th 2003. *La formation à la maîtrise de l'information à l'heure européenne: problèmes et perspectives* / Sylvie Chevillotte (ed.). Villeurbanne: Presses de l'Enssib, p. 37-54.

- *Barriers*: what are the main barriers to an effective integration of IL into academic curricula?
- *Literacy status*: what is the level of IL competency among university students in Europe?

Each research question corresponds in our vision to a (sort of) indicator aimed at depicting what we call the *IL-readiness* of a country.

Representing IL-readiness in Europe: the EnIL Observatory

Among the EnIL research results, the European Observatory on IL Policies and Research was established in 2006[12] with the specific aim of producing a picture of the degree of IL-readiness of European countries.
The Observatory was set up with a viewpoint purposely dedicated to the policy and research dimensions of IL and the Higher Education context of its application.

Design criteria of the EnIL Observatory on IL
The EnIL Observatory was designed according to a matrix of different criteria, which can be grouped according to the following categories: purpose-oriented, geographical, and research-sensitive criteria.
Purpose-oriented design criteria match the scope of the EnIL Observatory and therefore draw attention to the policy and research facets of the IL discourse and to the Higher Education context. This means that initiatives of a political matrix or in the academic environment are mainly considered.
Geographical criteria comply with the regional focus of the Observatory: Europe and European countries. This implies that the Observatory is hierarchically organised on a country-basis and includes European countries, though not exclusively European Union Member States, even if a section related to the European Union initiatives is included.
Research-sensitive criteria comply with our vision of what contributes to the IL-readiness of a country. Only what can be considered a factor supportive of the IL-readiness condition of a country is included in the Observatory.

The described criteria bring about a gateway of IL initiatives grouped by country (to date the Observatory has been established for Austria, Denmark, Estonia, Finland, Germany, Italy, Latvia, Lithuania, Poland and Spain, and consists of more than 600 web pages) and arranged in the following sections:

Policy initiatives
Survey-reports
Research projects
Campus initiatives
Events
Special interest groups
Academic library initiatives
Tutorials
Learning resource centres
Public library initiatives

Fig. 1 - Sections of the directory for each country in the EnIL Observatory

[12] *http://www.ceris.cnr.it/Basili/EnIL/gateway/gatewayhome.htm.*

A section contains a set of entries, each describing an initiative related to IL in the country.

Observed variables
The general format of the initiatives listed in the EnIL Observatory includes the following fields:

Title and network address:
Body responsible:
Start date:
End date (if applicable):
Typology:
Textual description:
Keywords:

Fig. 2 - Format of any single entry in the EnIL Observatory

Except for the Title, each field has been identified and included in the format because it has been considered functional to a variable which must be observed.
The earliest start date indicates the "age" of the IL discourse in the country, thus expressing the "*timeliness*" of the country in dealing with the IL issue.
The "body responsible" is representative of the *degree and nature of the involvement*: a government initiative obviously reveals a wider involvement than a faculty or library initiative, while an initiative by the Ministry of Education, rather than by the Ministry of Telecommunications or the Ministry of Innovation, expresses the country's *perception* of the *nature* and *context* of the IL issue.
The typology expresses the *scale* of the initiative: a national policy document, a research project or a library tutorial evidently have different effects and impacts on the country. The existence, distribution and prevalence of the different kinds of initiatives in a country are a sign of the *value* attributed to IL.
Each initiative described in the Observatory has been assigned a set of keywords, denoting its subject content. To date, the keywords have been freely attributed, due to the lack of a controlled vocabulary for the field of IL policies. This is among the future tasks to be performed in the EnIL Observatory, in order to achieve better indexing of the documents and allow for *comparative searching* among the various countries.

The EnIL Observatory as a source of IL policy indicators

The term "indicator" derives from the Latin verb *indicare*, which means "point out", "call attention to". The term is widely used in statistical analysis as a major tool for informed decision-making in policy formulation. This means that having the right indicators will result in better decisions and policy-making. According to the Oecd (1993), indicators are parameters that give information on some phenomenon and reduce complexity in order to make problems quantifiable and communicable. Averch (1980) conceives indicators as tools "to shape lines of arguments and policy reasoning".
A recent worthy attempt to define a set of IL indicators was made by Catts (2008), with the publication of a study commissioned in March 2006 by the Intergovernmental Council for the Information for All Programme (IFAP) of Unesco:

> The study recommends that a set of indicators of information literacy be defined on the basis of existing survey data, as many countries were unlikely to have the financial resources for

dedicated surveys and suggests the following framework for the development of information literacy indicators:

a) [...] the measurement of information literacy skills. [...]
b) The indicators of supply and access were important to establish the degree to which people with information literacy skills were able to use them in an information-rich environment. They are pre-requisites for the development of information literate communities.
c) Further investigation on the skills required for primary school teachers to model information literacy competencies in their practices is recommended. [...] (Catts, 2008)

Furthermore, the study highlights the need to "identify the *prerequisites* to Information Literacy namely *supply*, *access*, and *reception* of information, together with *ICT skills*".
Even if the policy relevance of IL is recognised in a number of passages, the study does not directly address the issue of defining *policy* indicators for IL. It nevertheless constitutes an important starting point for future speculation on the matter.

Despite the simple definition by the Oecd (1993)[13] , an indicator should be made up of a definition, a value and a measurement unit. Indicators, therefore, are specific statistical tools, collected on a regular and systematic basis. According to Van den Berghe (1997), four types of indicators can be distinguished: descriptive indicators, management and policy indicators, performance indicators, and quality indicators (a subset of performance indicators).
Far from claiming to follow a sound statistical approach, the EnIL Observatory nevertheless provides a set of variables useful to the building of a picture concerning the IL-readiness of European countries, with a special focus on the policy dimension.
The main IL-readiness variables provided by the EnIL Observatory are listed in fig. 3.

Timeliness in addressing the IL issue
National policy awareness
Role of IL in Higher Education
Degree of perception
Disciplinary contexts
Scale of the phenomenon
Configuration within the education system
Agents/stakeholders

Fig. 3 - Main variables in the EnIL Observatory

Concluding remarks

The research agenda of the European network on Information Literacy is mainly focused on Information Literacy policies in the European Higher Education system. The EnIL Observatory on IL Policies and Research in Europe has been designed and developed in order to:

- provide a picture of the IL-readiness of European countries;
- allow for comparative studies on IL policies and research activities among European countries.

To date, it is a qualitative rather than statistical tool, since measurement issues have not yet been considered. Nevertheless, the statistical counter which records accesses to the Observatory demonstrates that it is highly used, in Europe and worldwide.

[13] "Indicators are parameters that give information on some phenomenon".

The design criteria of the Observatory and the variables identified can be considered as a framework for building a map of IL policies and research activities in Europe and, mainly, as a basis for building a set of statistical indicators aimed at formulating and implementing coherent IL policies.

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Implementing the Observatory: towards a controlled language

Lisa Reggiani[1]

> *Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a* de facto *solidarity.*
> (Robert Schuman, *Declaration of 9 May 1950.*)

The Schuman's sentence exactly describes, instead of a utopic dream and an optimistic omen, a concrete action line, which is also at the basis of the birth of the Observatory: an *in fieri* construction, which attempts to faithfully reflect the European landscape of initiatives, fragmented and multifaceted in *space* (countries; social, cultural, professional spheres; institutions, individuals and groups) and in continuous evolution in *time*. With the same spirit of the founding father of the European Union, some guiding directions, which can converge towards shared aims, are tried to be identified and followed within the multiplicity, the fragmentation and the irreducible diversity.

Published at the beginning of 2006, the gateway – in its general structure as well as at the single-country level – has been improved and enriched, maximising a multi-year research work.

In spite of the dispersion and incoherence of several initiatives, it has been chosen to privilege, within the European Culture of Information, the following centres of interest: the policies, the most innovative and original research projects, all that has been happening in the European education space, esp. in the HE area, subject to a crucial revolution during these years.

The primary distinction, which puts the initiatives into order on a country basis, and the subsequent one, which groups them in different typologies, are aimed at achieving an essential objective, i.e. a consistent and sufficiently homogeneous data organisation, which can allow a unitary reading of the data and their substantial comparability; at the same time, the focus is on the most significant differences and peculiarities, on the national ones *in primis*. A particular emphasis is given to the main evolution trend of European Information Literacy, starting from *library instruction* and *user education*, that is to say from the narrow and specialised LIS fields, to the real *information literacy*, a key skill in the Information Society, equally transversal and basic, and a critical requirement for the current imperatives, i.e. *learning to learn, lifelong learning* and *active citizenship*.

As regards the architecture of the gateway, the work has been intended for a simple and intuitive use which, due to a straightforward presentation of issues, can emphasize the usefulness and the clearness of the communication. In fact, the overall scheme and the arrangement of the single initiatives, including their internal articulation, as well as the content selection and the stylistic and formal tone have been thought and implemented trying to safeguard, on one side, the reliability and accuracy of the scientific content and, on the other side, the readability and effectiveness of the message.

The goal has been pursued in a complex and fluid general context, where IL often shows its *protean*, *hybrid* and *transdisciplinary* nature, mixing not rarely with heterogeneous

[1] Italian National Research Council. Ceris Institute - Rome, Italy

experiences. Therefore, using the words of Paolo Bisogno[2], a "conceptual multidisciplinarity" and a "functional transdisciplinarity" are recognised, which clearly reveal the native and deep relationship of IL with Documentation Science[3].

Some general indications on the concrete bulding of the gateway

A non linear search path and its starting points

The actual search process has been neither rectilineal nor neat, so that no tidy progressive development model with an "immaculate appearance"[4] can be artificially reconstructed, not even *a posteriori*. The path has been oblique and tortuous, with various blind alleys and some oases of serendipity.

Two publications dated 2003 have been the basic starting points: a volume edited by Carla Basili – *Information Literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union*. Consiglio Nazionale delle Ricerche: Roma 2003, 315 pp. – and an article of Sirje Virkus – Information literacy in Europe: a literature review. *Information Research, 8(4)*. In particular, the rich bibliographies in the works cited turned out to be precious mines of information, and thus further starting points for as many investigation tracks.

There have been three critical problems which turned out to be substantial obstacles as well as challenges and chances.

1. Due to its hybrid, transversal and multiform nature, the **semantic plurality of the concept,** widely discussed in the literature, is always *in fieri*, and increasingly successful. Consequently, IL has actually become a *land of confusion*, as it was expressively defined in a blog[5]: a fashionable term, very narrow and specific or broad and general, abstract and theoretical or functional and pragmatic, that is to say tied to concrete achievements and practical results.
2. The **variability in space:** relevant differences are not only macroscopically related to the different countries (from where the country based structure, observable in the general index), but also to the various areas of society, to the different groups and professional, educational, social and cultural sectors.
3. The **variability in time:** in the last twenty years approximately the evolution of the concept has coincided with its progressive emancipation from the primitive spaces of user training/user education (still affected by the 1970s climate), with the success of the network as the prevailing cognitive, organisational and social model, with the uninterrupted and vertiginous expansion of the ICTs and new media, and with the development of the European Education and Research Areas according to the cognitivist and constructivist revolution. Against the transience and volatility of web sources – the most commonly used information sources – the Observatory aims also at preserving the diachronic memory or trace of what has been done, and thus at documenting the change in its evolutionary path.

Symptom and concause of the current radical transformation, IL is strongly affected by the changing climate, among multimedia, active learning, social network and web 2.0. The main *fil rouge* runs from the initial **(library) user (centred) approach** – that is *library instruction* or *user education/user training*, all characterised by costumisation and modularity – to the final predominant **(active) learner (centred) approach** – *information*

[2] Cf. *Documentazione e Biblioteconomia. Manuale per i servizi di informazione e le biblioteche speciali italiane*, a cura di M. P. Carosella e M. Valenti. 4th ed. Milano: Franco Angeli, 1987. *Presentazione* di P. Bisogno, p. 15.

[3] For their mutual interrelations, see C. Basili (2008), *Theorems of Information Literacy*. In: Information Literacy at the crossroad of Education and Information Policies in Europe, edited by C. Basili. Roma: Consiglio Nazionale delle Ricerche, p. 38-39.

[4] Cf. Robert K. Merton, who quoted himself (*Social Theory and Social Structure*, rev. ed. 1968, p. 4), in the *Preface* to *On the Shoulders of Giants*, 1985 (*Preface to the Vicennial Edition*, p. xxii).

[5] The Blog of Michael Lorenzen, *The Information Literacy Land of Confusion*, <*http://www.information-literacy.net/*>.

literacy proper, close to prevailing cognitivism and constructivism, which have massively permeated all the strata of society, as far as to weigh heavily on national and European institutions.Therefore, in brief: *autonomous/independent learning, self-directed and self-paced learning, learning skills, subject-centred pedagogy, critical thinking, activating (teaching) methods, action-oriented approach, project-oriented approach, collaborative learning/knowledge.* All these changes have dramatically expanded in the European horizon just in the years immediately subsequent to 2000.
To date, the best-known and most accessible European countries, thanks to their importance in the field and to the pervasive use of their national languages – such as UK and France, which have been in the front line for decades, and are internationally known due also to their world wide spoken languages – have been left out; on the contrary, the focus has been put on emerging areas, less known and still in a pioneer stage, or on the most advanced ones, traditionally in the vanguard or in a rapid and at times surprising recovery, damaged by little-known or niche languages.

A practical means for searching

The aim has been to create a unified access point for an international audience as wide as possible, that is to build a concrete product and not to carry out an essay or a study, in order to provide a theoretical fine tuning of the problem. Thereby, a flexible and pragmatic approach has been adopted: the five ACRL standards[6] have been used and thus the searches have been expressed in terms of learning outcomes. This turned out to be an essential compass, since the web has been the predominant, if not exclusive, search domain[7]: from institutional websites – of ministries, universities, associations, etc. – to the publications of field experts (reports, journal articles, etc.). They have not been applied in a rigid manner, but adjusted to meet local and sector needs and according to the main development lines: in order to reconstruct the "fortune" of the IL term and concept.
A useful expedient has been to split the standards, i.e. to use them *singly* in searching and in particular to separate the *inquiry* side – focusing the problem and, respectively, the information need, search(ing) skills, critical analysis and reflection – related to the 1, 2 and 3 standards, from the *production and communication* side – elaboration and expression, publishing, performance, presentation – related to the 3 partially, 4 and 5 standards. It has allowed to identify, to emphasise and to discover, also in unexpected areas, some relevant aspects, even partial, of scientific methodology as well as rhetorical, communicative, linguistic and expression features.

The keywords

A list of keywords has been assigned to each initiative, in order to precisely identify and effectively describe it. By integrating the natural language and the neighbouring controlled languages in the operational practice, the basis for building a standardised European lexicon devoted to the Culture of Information was laid: in fact, identifying the most common terms and fully highlighting them, a network of terminological correspondences in the different European languages has gradually taken shape. On the one hand, we have tried to preserve the singularities of the variegated European experiences, both individual and local, and their distinctive features; on the other hand, we definitely moved toward an overall and shared standardisation of the domain-specific vocabulary.

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[6] ACRL Information Literacy Competency Standards for Higher Education <*http://www.ala.org/ala/mgrps/divs/acrl /standards /informationliteracycompetency.cfm*>. Besides, their use is justified by the fact that in various European countries the IL introduction was bounded up with the translation of the ACRL standards into the national languages. Cf. Basili (2003) and Virkus (2003).
[7] For reasons of better availability, accessibility and overall handiness.

The monitoring

From the middle of 2006 to the middle of 2008 the accesses to the main pages of the EnIL web site, and in particular to the pages of the gateway, had been systematically monitored through counters, in order to control its visibility and its gradual stabilising in the national and international context, observing the growth, frequency and regularity of the accesses. The regular cadence of monitoring and its biennial duration allowed to notice the taking root and strengthening of the Observatory in the global landscape, and to collect information on its use, on the local and institutional/typological provenance of the visits – predominantly from universities and research centres – and on the increasing diffusion of external cross links. At the beginning, Northern and Eastern Europe have largely prevailed, later the usage of the gateway has spread to all countries of Europe, in particular to Spain and Portugal, and finally to the extra-European world (USA, China, India, Middle East, and Africa). The high and constantly growing number of accesses and the noteworthy and increasing user loyalty have made us consider that would be appropriate to provide the Observatory with a Creative Commons use licence.

The hierarchical scale: the national indexes

The name of the gateway, *European Observatory on IL Policies and Research*, immediately reveals its fundamental and distinguishing perspective, exactly focussing on policies and research projects.

The **policy initiatives** constitute the first field and include a broad and composite spectrum of activities, carried out by the institutional bodies in the different European countries. From a documentary point of view, the policy initiatives represent the most conspicuous exception. The entries corresponding to the policy documents depart from the principle of the standard secondary literature – which obviously presuppose a critical review and elaboration of the primary sources – in favour of philological rigour and scientific honesty, since they contain almost exclusively[8] quotations: the passages concerning the topics have been selected and faithfully quoted, or, if not directly available in English, translated as literally as possible. Our choice is not the result of a philological whim; on the contrary, with regard to official documents, it seemed essential to us to preserve the original tenor and thus to provide the necessary contextualization, attempting to reduce our exegetical interference to the minimum. As it was already pointed out, within this domain there is a structural terminological uncertainty since many and very varied things and concepts - similar or partially overlapping or also very different, even within the same country or within similar institutions - are meant by the same words; to this spatial and synchronic instability a further diachronic variability, the primordial distinction of languages[9], the deep otherness of some European languages and the fact that the new concept has often come from an Anglo-Saxon milieu, i.e. from a different language and culture, are added. In the general index, published on the home page of the gateway, Europe is the first item in the list, as if it were a country such as the others: *policy initiatives* are predictably the only field in the corresponding index, since there are only policy documents produced at European level on the topics of interest.

The **survey-reports** constitute the bridge between the policies and the research activities. They have been mainly produced within national and international public institutions. They represent a rather rare type, nevertheless they have - either deliberately or implicitly - a considerable political value; therefore they have been emphasised in an *ad hoc* field, put in the second position in the priority sequence proposed by the index. Most of them have been

[8] There are also some summarised passages, where the original is clear and plain so as to easily allow its interpretation and summary.
[9] If it is true, as Humboldt asserted, that "die Verschiedenheit [der Sprachen] ist nicht eine von Schällen und Zeichen, sondern eine Verschiedenheit der Weltansichten selbst".

produced within the universities (in Estonia, Germany and Spain), and only the Estonian report provides a European perspective; the focus of the others, strongly connoted in national sense, is on the new issues, models, services and activities of the (university and school) libraries (the German report and both the Spanish ones); few have been issued by national bodies (such as the national report on the *Development of education* issued by the Latvian Ministry of Education and Science, which, because of its crucial political relevance, was directly inserted into the policy initiatives of Latvia) and by international ones (such as the OECD - Organisation for Economic Co-operation and Development, that is the author of the report on Lithuanian education).

The **research projects are** numerous and of great importance in Finland. They are also several and significant in Denmark, Germany and Spain, but decrease in Italy and Lithuania; they are very few in Austria, Latvia and Estonia, and are entirely absent in Poland.

The subsequent couple – the **campus initiatives** and the similar and rarer **institutional body's initiatives** (which are only present in Austria and Italy) – expresses the fundamental relationship between IL and higher education, professional development, permanent education and lifelong learning. At an overall level, it is pointed out that within universities IL contents group together into a crosscurricular and transdisciplinary strand: the track of academic study skills (academic skills, study skills), of learning skills, of methodical skills and scientific research skills (scientific skills, research skills, research methods skills) which exactly stress the function propaedeutic for HE and for learning in general (learning to learn, lifelong learning and permanent education), the founding methodological importance for scientific research; and then they gather in three main areas, more connoted in a disciplinary manner: the first stream, widest and undifferentiated, which includes communication and rhetoric; the second one, linguistic, mainly concerning the mother tongue and English; finally, the last one, more specialised, the properly LIS track.

The following **events** and **special interest groups** (SIGs), so to speak a filiation of the previous two blocks, are their logical outcomes in terms of concrete results and human resources: in fact, the various subjects present and disseminate their work (projects, research, study and teaching activities, reports of different kind, surveys etc.) in the organisational framework of the events; among the SIGs, there are *ad hoc* work, study and research teams, arisen from the cooperation of several public and private actors or established within the different bodies or LIS professional associations.

Then there are the **academic library initiatives**, which form the primitive core, where the first IL experimentations took place in Europe, in conjunction with the deep revolution – of technologies, methodologies and educational contents – which has invested the university libraries, radically transforming them and giving rise to contiguous, innovative and dynamic environments, the **learning resource centres**. In the privileged space of the university libraries, IL has developed, pervasively as from the late 1990s, in the narrower and operational shape of *library instruction* and *user education/user training*, which turns out to be a consequence of the user centred approach characteristic of the 1970s. The learning resource centres – set up in the Scandinavian area in the wake of analogous Anglo-Saxon experiences and in Spain[10] – are cross-disciplinary learning environments in the service of didactics and research, in the forefront of the use of ICTs and of digital information resources, according to the new educational trends.

The **tutorials** follow, which are the concrete didactical products ranging from library instruction to IL, realised by universities – mainly faculties of LIS, Educational Sciences and

[10] With the LRRC, the *Resource Centre for Learning and Research*, corresponding to the CRAI, *Centro de Recursos para el Aprendizaje y la Investigación* in Spanish (Castilian) and *Centre de Recursos per a l'Aprenentatge i la Investigació* in Catalan.

Health Sciences – and polytechnics, and/or – for the most part – by university libraries and at times by public libraries in general.
Finally, the **public library initiatives** concentrate in the German-speaking areas (Austria and Germany), where public libraries are historically active and vital, essential ganglia of the urban tissue and advanced points of experimentation and development also in this sector; some isolated examples – generally limited to library instruction and user education – have been found in the rapidly-growing Baltic Republics – in Estonia and Lithuania – and in Italy.
Unique among all the released countries, Poland comprises the **journal issues** field: a monographic issue of an online library journal – *EBIB - Electronic Bulletin for Librarians,* n. 1/2005, January (62) – entirely devoted to user training and information literacy, which provides a challenging comparison between the pioneer stage of Polish university libraries and the most advanced international experiences (in UK and USA).

The most efficient search terms, and the corresponding clusters of words in their contexts

Due to the shortage of available subjects, the search strategies have been based on the almost exclusive use of keywords as search terms.
Retracing *ab initio* the development of the gateway, it could be enlightening to examine in more details the keywords and the search keys (search terms, search phrases, search strings) which have been shown to be more successful in finding information on relevant initiatives, as well as the most significant groupings of words occurring within them.
Recalling the followed path, the order in which the countries to date present in the repertory have been investigated and published will be respected, with the only exception of Austria – which is actually subsequent to Italy, but will be put closer to Germany since they are similar from a linguistic, historical-cultural and social point of view – and of Estonia, published earlier than Spain, but joined to Latvia e Lithuania, to picture a unique Baltic reality, very dynamic and anxious to make up lost time and to establish itself as a leader within the global Information Society, after gaining independence from the URSS (1991). Starting from the volume edited by Carla Basili and from the article of Sirje Virkus, an increasing going away from both these publications – prevailing for Germany and almost complete for Italy and Austria – can be observed, together with the growing use of primary sources in original languages: from English of the first two countries – a forced choice, neither Danish nor Finnish are known to us – to German, Italian, Spanish (Castilian) and Catalan, largely employed for the respective nations.
As regards **Denmark** and **Finland**, the use of sources only in English has however allowed to find a lot of relevant documents and information; in fact, in both countries there are a widespread mastery of English language, at all levels, a broad awareness of the scarce diffusion of the respective national languages, and a strong international vocation: nearly all the web sources – whether they are government documents, or institutional reports, or multiple source types concerning research projects etc. – are at least bilingual, if not even directly produced and disseminated in English. Moreover, in both the countries the expansion of IL, its technological and digital connotation and the stress on the learning dimension are largely inspired by Anglo-Saxon models, as the considerable presence of LRCs – established on the basis of the USA and UK examples – also demonstrates. Thus the IL sector in both the States is at least partially the result of a conscious introduction of foreign (Anglo-Saxon) culture and experiences.
Denmark and Finland have some issues in common:

- the *geographical proximity*, which translates to a *cultural affinity*, in the horizon of the Scandinavian world and, more generally, of the North Europe, technologically advanced,

characterised by a continuous engagement in human promotion, civil and economic development, social inclusion, and active citizenship; not by chance, many of these keywords frequently recur, to create significant word clouds, next to *information literacy/information competencies* or to terms semantically connoted in an *educational* or *information* sense;
- the *receptivity of university libraries* to outside experiences and challenges;
- a *precocious and spread sensitivity to IL topics* and to related problems, early broadened and deepened and rapidly expressed in effective social interventions, and an *increasing openness* towards the international stimuli.

Similar and variously neighbouring concepts, frequently identified through descriptions and periphrases (such as *the ability to search for and use information*) correlated to *information skills/information competencies* have often allowed to find the initiatives.

Denmark sees the Parliament, together with the Ministry of Education, directly engaged in introducing IL – officially mentioned as *the individual's ability to seek and use information* – as one of the seven main aims of the 2004 reform, which renewed and invigorated the *educational and vocational guidance system*, accompanying the formalised educational system. Connecting IL to guidance means seizing and following one of the most topical and vital directions for the European education, i.e. the promotion and development of informal and non-formal education, of tutoring, coaching, mentoring and counselling, a sign of the ongoing educational revolution.

The Ministry of Education collaborates with the Ministry of Science, Technology and Innovation to enhance the *internationalisation of education and training*; thus the word cluster grows, including key terms like *knowledge society, knowledge-based society, active citizenship, equal opportunities, social cohesion, basic skills for the knowledge-based society, ability to learn, open learning environment.*

With regard to the research projects, the leading role of libraries is reflected in the very frequent recurring of the word *library/libraries*: *research libraries, university libraries, library development.*

The *research libraries* – under the aegis of the DEFF - Denmark's Electronic Research Library as from 1998 – and the *academic libraries*, which have been promoters and organisers of pioneer activities, are in the absolute foreground: therefore, *research and education libraries* accompany IL. At the beginning *users* have been at the core of *instruction* and *guidance*: *user instruction/user education* has prevailed, next to *user support, user satisfaction, user facilities.* The landscape has gradually become rich and varied, so that, next to *library services* and *library competences, library instruction in information competences, user information competences* and *user-centred information literacy education* have appeared; then *information literacy, information literacy skills, information competence, information literacy education* prevail, and there is an increasing openness to innovative pedagogy and to the centrality of learning and of all its most topical forms, with special attention to IT and the web: *cross-disciplinary approach, learning and problem based learning (PBL), learning process, learning methods, lifelong learning, e-learning, blended learning, learning objects, virtual learning environments (VLEs), net education, web based information modules, multimedia programmes, learning and IT.*

Moreover, in Denmark the "search(ing)/seeking" facet doubtless predominates: not only the term *information search* and the connection of IL with the *search process* are very common, but IL, though exactly corresponding to *Informationskompetence* (IKT)[11], is often rendered in Danish by *Informationssøgning*, precisely equivalent to *information seeking* (*søge*=seek).

Among the most active bodies, university libraries sometimes collaborate with academic

[11] It is not actually a *literacy*, but rather a *competence*, like in German.

writing centres, for ex. in Scribo, where *academic information literacy* focuses on *the process of research paper writing*: *literature search, scientific information search, research question* and thus *information search skills* are in evidence.
Besides, together with some specialised studies on information retrieval and information searching carried out by LIS faculties, there are a few universities – Health Sciences and Agricultural University – engaged in initiatives limited and often rapidly exhausted, which just tie *(independent) information search, (scientific) literature search and evaluation* as well as *information literacy, information retrieval* to critical thinking and scientific skills, to *critical reading, research-based teaching, scientific study techniques and methods*, and new learning methods *(PBL, independent learning, self-directed learning).*
In **Finland,** the Ministry of Education has been in the forefront, with a broad spectrum of initiatives, since 1999. Some very poignant slogans focused on *information society* issues – such as *information society skills for all* – recur in the objectives and guidelines of the following years: *information society skills, information society knowledge and skills* are associated with the different *learning environments* (*network learning environments, open learning environments, virtual learning environments* and *online education*); then *information skills* and *information management skills* are joined with the crucial role of *public libraries* in their training, and with the necessity for spreading them through the education of *all citizens*, including *teacher education* and *adult education* with special emphasis on women and ageing population. In the *National strategy for 2000-2004* for *education, training and research in the information society* (1999-2000) and in the *Information Society Programme for Education, Training and Research 2004-2006* the critical nexus of *education, training, research* and *information society* is found.
In fact, in Finland *information society* is actually the keyword par excellence.
Due to the prevailing civil dimension of IL, compound expressions containing *information society* have accumulated in the political sector since 2003-2004 along the three main lines of *education/training, culture* and *research,* in which *scientific methods* skills are significantly added: the *information society development* and *information society skills* are essential in the *strategy for education and culture* and in the *development plan for education and research*; and, once again, *librarians* have been entrusted with teaching information literacy to HE students.
The Information Society Council is a key body among the social actors for promoting the Information Society, and the *network* as the national cognitive, educational and social paradigm. In the 2005 report addressed to the Government, the term *information society* has been obsessively repeated and three stages to achieve the information society in Finland have been identified; the first preliminary step consists of setting up the network as the essential technological infrastructure, and the second one "is linked to competence and knowledge" vitally necessary to move with confidence "along the highways and footpaths of information": these are, once more, the *information society skills*/information skills and competences/IL, an area in which *public libraries* play a pivotal role.
Focussing on their civil dimension, the *citizen skills* – or *citizens' (information society) skills* – are strictly related to *active citizenship,* and are based on the aware and confident use of ICTs (so that they are connected to the *ICT usage skills*); nevertheless, they are not restricted to it.
Hence they cover the following main spheres of intervention:

- the area of *information search(ing),* carried out in a more or less expert and sophisticated manner, especially on the Internet (*information retrieval, information seeking, information searching, Internet searching, search engines*), and of *source evaluation* (*source criticism*); in this sector the educational role of libraries (*library instruction, user instruction in information seeking and processing*) is clearly visible;

- the field of *media education – media culture, media skills, media-related skills* and *media literacy/multimedia literacy* – which is part of broader *networking and communication skills*, within the development of a widespread *communicative general education;*
- last, citizen skills are again linked to *learning, independent learning, problem solving, independent studies,* which take full advantage of *online services and material.*

In other policy documents, issued by the Ministry of Education, in the field of education, culture and science, the *civic society* and the *information society skills* (or *information society skills education*) are in clear evidence, connected with *citizenship skills*[12], *lifelong learning, adult education,* and with learning, *social participation* and development supported by *public libraries,* whose strategic importance is highlighted.

As regards the national policy on libraries, in the *Library strategy 2010* (dated 2003), the *teaching* of *information retrieval* and, above all, the teaching of *media literacy* – which comprises IL, equated to *library competence,* "the ability to handle information" – is a key issue for *public libraries.* In the first *Library policy programme 2001-2004,* dated 2000, the *information society citizenship skills* (*citizenship skills*) include *traditional literacy, computer literacy, information literacy, media literacy, information retrieval skills, information acquisition skills, skills in creating cultural meanings, information production skills.* And the corresponding *instruction* of citizens is again entrusted to the *public library.*

Three strands can be identified in the research projects.

University libraries are still cardinal, beside the LRCs, engaged in designing and proposing a *curriculum plan for IL,* i.e. an *IL curriculum* for HE, and in promoting the *integration of IL* into *academic curricula.* Librarians – who have become *library educators* – are involved in many IL activities, as coaches, tutors and counsellors of students, esp. in the *thesis process.* The related word cluster includes *IL, IL competency, IL education, academic information skills.*

Once more the "search(ing) facet" (*information search, information seeking, IR, IR skills*) and the key importance of the web and the Internet *(Internet learning environment, web-based teaching of information management, web pedagogy*) are in evidence.

Universities, often joined in networks, generally focus on the *(academic) study skills,* transversal and essential for students from all faculties. Several powerful search terms have cascaded, centred on *learning* (*learning skills, learning strategies, learning styles, web-based learning environment, e-learning*), on the scientific and methodological core (*scientific skills, study skills, scientific methods skills, group work skills*), and on information and communication side (*information search skills, reading and writing techniques*).

There are also the LIS faculties, with their Information Studies departments, where several SIGs (FIRE, IRiX, REGIS, etc.) are at work, and the Education faculties, which collaborate with the previous ones or operate autonomously: *IL* and *information searching* (and *IL instruction*) are near to *learning* (*IL and learning*), to the new tendencies in didactics and education (*learning environments, searching and learning behaviour, learning processes, learning outcomes, learning styles, meaningful learning, PBL; activating learning approach, activating teaching methods, student-oriented teaching methods*), to the web (*web searching*) and to media (*media pedagogy, media literacy, media education*). In particular, the researches of the SIGs focus on *information needs and behaviours* of specialists and non specialists: *information (seeking) behaviours* of journalists, of scientists, of Social Sciences and Humanities scholars, of medical students. They are also centred on *citizens' information seeking habits in everyday work* and in informal contexts (*non-work information seeking* and the wide area of *everyday life information seeking* for *self-development*); on *health information literacy,* on *health information behaviours,* esp. of minorities and disadvantaged groups; on *health information searching on the web.*

[12] which, in the *information society,* encompass *technical skills, information skills* and *communication skills.*

From the very little that could be identified and used in Finnish, the Finnish *informaatio**lukutaito*** is perfectly equivalent to the English *information literacy* as well as *informaatio**kompetenssi*** corresponds to *information competence*. Furthermore, ***tiedon**hakinta* expresses a concept similar to *information seeking*, although the first element means something in between *information* and *knowledge*; and *akateemiset **opiskelu**taidot* is equivalent to *academic study skills*.

Germany and Austria constitute a compact area, distinguished by a considerable historical and cultural homogeneity and by an institutional and organisational affinity[13].

In **Germany**, the Federal Ministry of Education and Research promotes *the use* of *scientific and technical information* (STI)[14], *STI integration into teaching* and thus the spread of *users' competences*, putting them at the core of its *development policy* (*Förderpolitik*). IL recurs in the *Strategic position paper* (2002) and in the federal report *Research 2004* (2004), as *a basic skill* like *reading, writing* and *counting*.

In the Action program *Information Society - Germany 2006* (2003), arisen from the collaboration of the Ministry of Economics and Labour and the Ministry of Education and Research, IL is an essential competence for the development of German *information society*; and its relationship with *education* and *equal opportunities* is stressed.

A specialised item, the *Standards for teaching information literacy in higher education* set by the AG Information Literacy, place IL in the real life and in the concrete structures and explicitly connects it with the *library* and the *librarian educational offers.*

Information literacy and *reading literacy* is a deep and frequent connection, peculiar to the whole German-speaking area.

Cohesion, integration, cooperation and *partnerships* are the national watchwords: the famous *Konkordanzmodell,* the traditional key paradigm of the German society, has turned into *Konzertierung* at all levels. In fact, agreements, different kinds of collaboration, and strong partnerships involve, in diverse ways and to a smaller or greater degree, federal and local institutions, research centres – public and private, national and international – as well as universities (for ex. the Computer and Information Science Departments, the Centres for Study Counselling and Continuing Education), and university, State and city libraries[15].

With respect to the projects, there is a typical, very firm connection among *Länder, municipalities, public libraries* and various school types, from primary to high *schools*: the library is often the pivot of the today's educational experimentalism, involving the whole city (*reading municipality*), so that IL ties itself to *media literacy*, *reading literacy* and *reading development.*

Moreover, libraries are very active in universities, schools and in the professional world, often joined through strategic partnerships with university departments, private foundations, and research centres, with the support of the Federal Ministry of Education and Research or of the Ministries of the single *Länder.*

In order to highlight the critical role of the academic libraries, the survey-report (2005) has demonstrated how, within the European HE area, the German *study reform* can be a chance both for *university libraries* and *university students* through the *integration of IL* into the Bachelor structure.

Therefore, also the word cloud reveals the libraries' key role: in addition to *university libraries* and *teaching libraries*, there are *library skills, virtual libraries* and *www environments, school libraries, multimedia library* and *multimedia supported learning.*

[13] *Inter alia,* they are both federal republics.

[14] In German *WTI* (=*Wissenschaftlich-Technische Information*), from which the compound word *WTI-Politik* (STI policy) was made.

[15] Traditionally at the core of the German cultural, civil and social progress, they are now protagonists of the current educational renewal, turning into *teaching libraries;* in fact, within the *teaching library* – frequently used in English, beside *die lehrende Bibliothek,* in order to emphasise the international dimension of the concept – the library's educational role and thus IL are stressed.

The setting up of theoretical and operational models, frameworks and systems – i.e. cognitive, methodological, learning, educational, didactic and curricular paradigms according to cognitivism and constructivism – is a distinctive feature of the country; so that, in the typology field, the item *framework-model* occurs most frequently just in Germany. Hence the related cluster contains the following terms: *information literacy model* (*IK-Modell*, i.e. *Modell der Informationskompetenz*), *information literacy learning system* (*LIK - Lernsystem Informationskompetenz*), *spiral curriculum* (*Spiralcurriculum*), *module/modular system* (*Modulsystem*), *guidelines* (*Leitfaden*), *guiding principles* (*Leitprinzipien*), and, within the new educational horizons, *collaborative learning system* (*kollaboratives Lernsystem*), *collaborative knowledge management system* (*kollaboratives Wissensmanagementsystem*), *cooperation, communication, IL*, a *collaborative and communicative paradigm for KM, constructivist learning model, blended learning model, activating methods* (*aktiviriende Methoden*).

IL (*information competencies, information management, information skills, information seeking skills*), *IL training* and, more specifically, *subject-oriented IL training* are associated with *reading literacy, media literacy, media competencies, new media in education, media and IT competence, Internet competence/competences*; and with *scientific research, research competence, methodical competencies, presentation, communication and argumentation skills*. They constitute the *key competences* (*Schlüsselkompetenzen*) and the basic skills helpful to acquire *key qualifications* (*Schlüsselqualificationen*). More generally, the IL issues are connected to the modernisation of the cognitive and educational systems, to *e-learning, www environment, VLE, KM - knowledge management (Wissensmanagement)*, and to *lifelong learning (lebenlanges Lernen)* and *continuing education/further education (Weiterbildung/Fortbildung)*; and finally to all the slogans of cognitive and constructivist didactics: *constructivist didactics, project-oriented approach, constructive and subject-centred pedagogy, activating learning, action-oriented learning, self-regulated learning, self-paced education*.

Three projects, characteristic of the German situation from different points of view, will be examined in more detail. The *Leila Project: lifelong learning in processes of vocational education for furthering of disadvantaged groups* (2000) has been the result of the fruitful collaboration among the University of Bremen, the Centre for Education and Work of the Employee's Association Bremen (ABC), and the Federal Ministry of Education and Research: it has integrated *IL* - with a special but non exclusive emphasis on *Internet skills* – and *new media competencies* into the basic competences - together with *methodical competencies* and *learning skills* (*autonomous learning, self-regulated learning*) – of the *vocational education/vocational training* for disadvantaged groups, so that they can more easily compete in the job market (*job insertion*).

The precociousness of the initiative (1996-1998), the European dimension, the central role of a public library, and the focus on children between 9 and 12 years of age characterise the *CHILIAS - CHildren`s library - Information - Animation – Skills - The European Virtual Children's Library of the Future*, an international project with several partners pivoted on the Stuttgart City Library, which has offered children the chance to directly build a *virtual library*, by designing an evocative multilingual *www environment*, with limitless implementation possibilities, and has provided them with an *information skills tool*, Infoton, for interactive exercises in basic *information seeking skills*.

Finally, the proximity of the point of view of the *Stefi project* to the EniL's perspective is evident. Far from the library universe, it has been carried out by a social research institute: it precociously (2000-2001) established the critical nexus between *IL* and *HE*, and identified the lack of IL as a serious social emergency.

In **Austria** the Federal Ministry for Education, Science and Culture mainly deals with *new media* in *education*: integrating *new media* into *teaching* implies new *competence key issues*,

i.e. *media didactics, IL, KM*, new *qualifications* and a coherent *staff development*; there is also, since 2001, the development and promotion of a new school library project, the *multimedia school library*, to which the new *school librarians*, essentially regarded as *educators*, correspond. Thus IL appears to be one of the main *learning objectives* of the library, together with *reading literacy* and especially with *media literacy*; the related word cluster consequently encompasses *methodical competence/competences, research skills, interdisciplinary general competences, social and communication competences*, as well as *self-management* and *teamwork*.

In German, *Informationskompetenz (IK)* is equivalent to IL. It is often associated with *Wissensmanagement* (KM), *Lesekompetenz* (reading literacy), *Medienkompetenz* (media literacy), *Methodenkompetenz* (methodical competence), *Recherchefertigkeiten* (research skills) and to *soziale und kommunicative Kompetenze*. The *WTI-Kompetenz* is a pivotal issue in the *Informationsgesellschaft* (information society) and the program *Neue medien in der Bildung* (New media in education) embraces also the *Internetkompetenz* (Internet competence). The principal objective of the typical couple *Medienpartner Bibliothek & Schule* (media partners Library and School) is, together with *Lesekompetenz* and *Leseförderung* (reading development), the *Förderung von Informationskompetenz* (IL development), so that learners can become *medienkompetente Schüler* (media literate pupils).

In Austria the *(multimediale) Schulbibliothek* provides an ideal environment for experimentation and development of *Mediendidaktic* (media didactics) and *Medienkompetenz*. Once again *Informationskompetenz* is linked to *Medienkompetenz, Lesekompetenz, Methodenkompetenze*, and to *Recherchefertigkeiten*, to *Selbstmanagement* (self-management) and *Teamarbeit* (teamwork).

In **Italy** the first national policy initiative, concerning the compulsory schooling obligation, was issued by the Ministry of Public Education in September 2007. It adopted and implemented the *European key competences for lifelong learning* (December 2006) – where information competences are present, but scattered in two blocks, the mother tongue and the digital competence – and slightly altered them as *eight key competences for (active) citizenship (otto competenze chiave di cittadinanza)*; then it explicitly identified IL as an important autonomous competence, mentioned as *Acquiring and interpreting information* (*acquisire e interpretare l'informazione*), and placed together with *Learning to learn* (*imparare ad imparare*), *Communicating* (*comunicare*) and *Problem solving* (*risolvere problemi*). In the cultural axes information competences are distributed among the Axis of languages (*Mastery of Italian language*), the Scientific and technological axis and the Historical-social one, where the stress is on the different *source* types. The *New recommendations for the curriculum of the pre-primary and first cycle education* (September 2007) identified three disciplinary macro-areas: in the first one, linguistic-artistic-expressive, information competences cluster in the *Italian language*; in the historical-geographical macro-area the focus is on *documents* and *information*; in the third one, mathematical-technological, *information* skills are resorbed in *ICT* skills. The prolonged absence of any institutional intervention or stimulus – at a central or local level – is reflected in the Italian landscape of research projects, which are few and fragmented, mainly dealing with applied didactics and focussed on the search(ing) side (*search(ing)skills, information search*).

Concerning the *EnIL project*, set up in 2001 within an Italian research centre and characterised by a European and non national feature, the singularity of its focus clearly appears from the corresponding word cluster: *IL* is accompanied by *Europe, culture of information, network, policy/policies, policy awareness, research (research agenda, research activities, research projects), HE, IL-readiness*.

Another project, focused on *web searching*, is expressly inspired by cognitive psychology, as the related keywords demonstrate: *search skills, cognitive skills, cognitive strategies,*

cognitive styles, concept maps, metacognitive approach, metacognitive method, students as infotective[16].

The school sector, particularly with respect to high schools, is richer.

The *Blended learning information literacy project for high school teachers* started in 2005 on the initiative of the Library of the Carlo Cattaneo University (LIUC). The project combines IL with *e-learning* and *blended learning*, and it is aimed at high school teachers "in order to integrate high quality information on the Internet into disciplinary didactics". Therefore, it is focused on the *e-learning paths for high school students*, so that both the groups, teachers and students, can acquire the necessary *IL* skills, and in particular the search(ing) skills, at different degrees and for different purposes. Thus *web searching, information searching on the Internet, search strategies* and *e-books* are still crucial; as regards the methodologies, alongside a clear predilection for e-learning, the usual slogans of current didactics recur: *activating learning, action-oriented learning/teaching, problem solving, case studies, case-based instruction.*

The *school library* (*biblioteca scolastica*), its modernisation, in view of its growing educational and didactic function, and the new role of school librarians are pivotal issues also in Italy. Therefore, its renewal is at the core of several projects: the most recent is *Libraries at Schools - Schooling at the Library*, set up by the Ministry of Public Education (2004-2007) and aimed at supporting and promoting *IL, reading, lifelong learning, research methodology* and *research* skills in didactics, as well as at disclosing *digital libraries* to the school community. *The School Library: service, tool, observatory for promoting school culture*, established in 1996 by the BDP - Pedagogical Documentation Library, has put the school library at the core of the education revolution, transforming it into *a multimedia educational resources centre* (CREMS)[17], near to the *multimediale Schulbibliothek*, of the German-speaking area, thanks to a critical comparison with the most significant international experiences. The new library – as *learning environment* (*ambiente di apprendimento*) and *resource centre* (*centro risorse*) – is designed to promote students' *autonomous learning* and *independent research*, and to develop a critical approach to *information searches*; hence it requires new *professional profiles* (*profili professionali*), i.e. *school documentalists* who are, above all, *teacher documentalists* (*docenti documentalisti*); and their more adequate professional training and development is essential.

Also within the other projects – involving two high schools of the North-Centre of Italy – the multimedia school library is at the core of the school community. In the first project, *Searching for and processing information*, thanks to the collaboration of high school teachers, teacher documentalists and university teachers and researchers in LIS and Educational Sciences, the acquisition and development by students of *information skills* – fundamentally *information searching skills* – is an *education for research* and *research methods*, and the first step towards *independent learning* and *lifelong learning*. The second one, *The Library Project*, combines *library instruction* and *IL* and is aimed at enhancing and empowering students' autonomous learning and research skills; therefore, once again: *independent skills, documentary (re)search, guided and autonomous (re)search.*

In Italy the English term *information literacy* is very common to highlight the foreign origin of the concept, near to the Italian ones: *competenza/e informativa/e* (information competence/competences), *abilità informativa* (information skill/ability), *cultura dell'informazione* (culture of information) and *alfabetizzazione informativa* (information literacy education, i.e. the process to make people information literate), the last two expressions rarely used. Likewise, both *user education* and the Italian equivalent *formazione*

[16] In Italian there are also the following nexuses: *strategie cognitive per la ricerca in Internet, le mappe concettuali come strumento metacognitivo.*

[17] *Centro di risorse educative e multimediali della scuola.*

degli utenti recur. Since the *search(ing)* facet is emphatically marked in Italy, the use of phrases and nexuses concerning *search(ing) skills* and in particular *web searching* is wide: *cercare informazioni in Internet* (searching for information on the Internet), *la ricerca su web* (web searching), *strategie di ricerca* (search strategies) and *ricerca di informazioni disciplinari in Internet* (searching for disciplinary information on the Internet). Sometimes, as already mentioned, the focus shifts from simple *search* to *research* proper: *la ricerca e l'elaborazione delle informazioni* (searching for and processing information) and *lo sviluppo delle competenze di base e trasversali* (the development of basic and transversal competences) are linked to *l'uso competente dell'informazione (abilità informative)* (the competent use of information - information skills/abilities), *l'impiego esperto delle fonti di ricerca, degli strumenti e dei metodi della ricerca* (the expert use of information sources, of (re)search tools and methods), up to the *self-directed research* (*ricerca autodiretta*) in the perspective of *lifelong education*, i.e. *recurrent*, continuing and *permanent education* (*educazione ricorrente e permanente*).

In **Poland** information is scanty and almost completely available only in Polish. Thanks to Sabina Cisek[18], who gave us some useful information in English on the topic[19], we learnt that in two measures of the Ministry of National Education there are some IL elements: some information competences and knowledge and skills IL-related are – together with the ICT skills – mandatory achievements of pupils; and they also occur in some HE curricula. Moreover, in the *Preliminary draft* of the *National Strategic Reference Framework* (September 2005), the Council of Ministers states that the *development of the skills* needed for the *Information Society* and the *knowledge-based economy* must correspond to the *IT development*, in order to adapt the country to the requirements of the EU policies.

There are no projects, but various courses are organised by the university libraries: in fact, in Poland LIS professionals still have the monopoly over *IL/user education* activities.

In **Spain**, at the national level two policy initiatives have been issued by the Ministry of Education and Science. Firstly, according to the European tendencies, the *Annex 1 on basic competences to the Fundamental Act of Education* (2007) has provided for the introduction of *IL* (*Alfin* in Spanish) among the *eight basic skills and competencies* (*competencias básicas*) into the curriculum for the primary and secondary education, under the name of *information management and use and digital competence* (*Tratamiento de la información y competencia digital*); to which information searching, information processing, *reasoning skills* and *critical* thinking are connected. Secondly, a *framework document* dated 1995, *The School Library within the educational reform*, has stressed the importance of Spanish *school libraries* for the *educational reform* and has entrusted the *school librarian* with "training of pupils in using information sources". Consequently, his/her teaching and guiding role to develop pupils' information skills, their critical thinking, and a *critical* and aware approach to *information sources* and *documents* is emphasised.

On the contrary, the *Toledo Declaration on Information Literacy: Libraries for lifelong learning* has a marked library connotation. It has been the result of a heterogeneous IL working group, including professionals from public, school and university libraries, university teachers and administrative staff. It tightly links *IL/information competencies* to *citizen development*, *lifelong learning* and *libraries*: *IL promotion agenda, IL framework, IL curriculum* are alongside *key literacies and competencies, lifelong literacy agenda, social awareness* and its development.

[18] Co-author with Monika Krakowska and Maria Próchnicka of a contribution which provides up-to-date information about the latest Polish developments: *Information literacy education of pupils and students in Poland - diagnosis of the educational situation.* In: Information Literacy at the crossroad of Education and Information Policies in Europe, edited by C. Basili. Roma: Consiglio Nazionale delle Ricerche, 2008, p. 229-247.

[19] Cf. Sabina Cisek, *Information Literacy in Poland 2006.* Country report presented at the UNESCO-CEI Workshop on IL initiatives for Central and South East European Countries. ICPE, Ljubljana, Slovenia, March 27-28, 2006.

Two strategic plans of the Libraries of the Technical University of Catalonia (UPC) are noteworthy: *Aprèn – UPC strategic plan 2010* dates back to 2007, *Paideia - UPC strategic plan 2000-2005* dates back to 2000. In the former the university libraries represent a key factor to develop and realise the *new European knowledge space*. The new *library model* requires *new professional roles* of library staff and, among the services, there is *user education on information skills*. In fact, one of the *strategic issues* is the acquiring, by students and academic staff, of *transversal competencies*, particularly of *information skills*, thanks to the new *trainer librarians* – as *information skills managers and trainers* – endowed with new *professional competencies*. Within the latter the library is the fulcrum of change *from teaching to learning*: the *new learning process* assures the student's gradual emancipation; and the essential nexus *library-research* allows to move *from information to knowledge*. Through *user training* programs – a significant issue for the academic library, both for learning and research purposes – users, esp. students, can acquire *basic skills* in *information search and use* and *basic research skills*.

Of the two Spanish survey-reports, the first one (2006), written by a LIS university teacher, examines Spanish *school libraries* from the perspective of their *IL* activities and *reading promotion*; the second one, whose author is a LIS professional, focuses the *CRAI*, the Spanish LRRC, *the new model of university library* at the core of the HE shift in *the knowledge age*: it is the most effective instrument to foster *learning* and *research* skills through *user education* on *ICTs*, on *information skills*, on scientific and *project* skills.

As regards the research projects, universities are very active, esp. the LIS faculties, which often collaborate with researchers and faculties of Education.

Thus *Alfin-EEES* closely correlates *information management skills and competencies*, *learning to learn* and *European HE*. *IL* (*Alfin*) is one of *the key cross competencies* needed in the *knowledge society*, for *academic purposes* and *lifelong learning*, and it embraces the following skills and competencies: information skills, *problem solving* and *decision making*, *analysis skills, synthesis skills, learning skills, research skills, project management, communication* and presentation skills, *teamwork skills*, ICT skills. *E-COMS (Electronic Content Management Skills), an educational gateway to IL*, established in 2004 on the initiative of an interuniversity interdisciplinary working group, offers *learning methods* and strategies for IL to *university students*; and the *information skills* to be developed include *key skills and competences*: *knowledge skills, ICT skills, documental skills, processing skills, communication skills, basic research techniques* and *methods for problem solving*.

Besides, the *Alfin Red - Information literacy forum* was set up in 2007 on the initiative of the general Subdirectorate for Library Coordination of the Ministry of Culture. The project team includes LIS university teachers and librarians: it is a *virtual community* for study, research, promotion and practice of *information literacy services*, recognising the essential role of *libraries* in *digital literacy* and *lifelong learning policies*. In the blog some themes are significantly associated: *IL* (*IL activities, promotion of IL, public policies promoting IL* etc.), *audiovisual literacy, digital literacy, digital divide, digital inclusion*; *user education, information searching skills*; *HE, university students*; *lifelong learning, educational policy, pedagogical education to teach information literacy*.

The engagement of LIS faculties is achieved also through various SIGs (research groups). For ex. the *Observatory of the Knowledge Society within HE* is a project established by the Agustin Millares University Institute of Information Science and Management with the SOCTEP research group. It aims at analysing *the evolution towards the knowledge society within Spanish HE*, focusing on the *learner*-oriented approach, on *new learning/teaching models*, on *transversal competencies* as *ICT skills* and *IL* and on the growing importance of *research as basis of teaching*. It entails also the development of *IL indicators*.

Likewise, the DOTEINE project (2003-2006) and the IACORIE project (2005) were set up both on the initiative of the LIS Department of the Carlos III University of Madrid and of

the Agustín Millares Institute. The first one, based on the work of the DOTEINE research group, is directed at the development of *instruments for IL*, meant as *LIS instruments for IR* in order to support *lifelong learning* in *web-based learning environments*. Other goals are: the development of *digital didactic materials for IL*, the organisation and management of *educational resources*, the implementation of *digital libraries* in LRCs and LRRCs, and *the social spread of IL*. The second one is complementary and is focused on the *documentary tools and languages* useful for *educational resources retrieval*, especially on the Internet.
Finally, also *The BUCRAI project - From the University Library to the Resource Centre for Learning and Research* (2004) is a result of the activity of the LIS Department of the Carlos III University and of the Agustín Millares University Institute. Its focus is on the shift from the current *university library* (BU) to the *new library model* suitable for the *Knowledge Society*, the LRRC-CRAI, to be put at the core of the educational renewal (*learner-centred education, learning process* instead of *teaching content, lifelong learning*) within the European convergence in HE.
Alfin corresponds to IL in Castilian, to be solved in *alfabetización informacional, alfabetización en información, alfabetización informativa,* which are almost synonymous; there is also *alfabetización informativo-digital*, when the topical, innovative and technological dimension of the information universe is emphasised. The correspondence is not perfect, since *alfabetización* indicates a process, as in the Italian *alfabetizzazione*, and not a product or result, as happens with the English *literacy*, which is exactly equivalent to the Spanish *alfabetismo*[20]. *Alfin* goes beyond the narrower, more conventional *formación de usuarios* (user education) and fits into the constructivist and cognitivist educational perspective, according to the *sociedad del aprendizaje* (learning society), the *sociedad de la información y del conocimiento* (information and knowledge society), and to the *economía del conocimiento* (knowledge economy); thereby it requires *métodos activos*, and a new role for the *formador* (educator), who becomes a *facilidador* (facilitator). The word cluster encopasses: *aprendizaje a lo largo de la via* (lifelong learning), *aprendizaje permanente, aprendizaje significativo y colaborativo en rede* (meaningful and collaborative web based larning), *aprendizaje autónomo, supervisado, constructivista, socioconstructivista, documental.* Alfin is also a competence close to *aprender a aprender* (learning to learn) – so that there are *habilidades y competencias de gestión de la información para aprender a aprender* (information management skills and competencies for learning to learn) – to *resolver problemas* (problem solving), to *trabajo en equipo* (teamwork). Thus the following words are joined: *competencias sociales* (social competences), *alfabetismos* (literacies), *competencias de aprendizaje* (learning competences), *competencias de comunicación/ comunicativas* (communication competences).The library is linked to *aprendizaje y ciudadania* (learning and citizenship): there are specifically *biblioteca escolar* (school library), *biblioteca digital* (digital library) and *biblioteca universitaria* (BU), changed into the *Centro de Recursos para el Aprendizaje y la Investigación (CRAI).*
Similarly in Catalan *habilitats informacionals* (information skills) and *formació dels usuaris* (user education) – and *formació dels usuaris en habilitats informacionals* – are closely tied, within the *nou Espai Europeu del Coneixement* (new European Knowledge Space), to *aprenentatge al llarg de la vida* (lifelong learning), to *autoaprenentatge* (self-learning), to the *capacitat de presa de decision* (decision making capacity), and to the *desenvolupament del pensament crític* (development of critical thinking). The *neu model de biblioteca* (new library model) is once more a *Centre de Recursos per a l'Aprenentatge i la Investigació (CRAI).*
A push towards EU modernity characterises **Estonia**, which strives for its full integration; hence *development* and *social inclusion* are keywords commonly used in all the institutional

[20] As *multialfabetismo* is the precise translation of *multiliteracy*. Cf. also C. Basili (2008), *Theorems of Information Literacy*, cit., p. 35-36.

interventions. With respect to the policies, the Ministries of Education, of Environment and of Social Affairs have been active since 2001. They have tried to bridge the gap which divides the country from Europe, fighting its backwardness. The Ministry of Education, in the national report *The Development of Education* (2001), has explained how the national *education system* copes with the *information society* and its changes: *information skills/abilities* are in focus, connected on one side to *ICT* skills and *media* literacy, and on the other side to *learning to learn, independent learning, critical thinking* and *lifelong learning*.
The Ministry of the Environment has closely linked the National Strategy on Sustainable Development, *Sustainable Estonia 21 (SE21)*, dated 2005, to the active engagement of the whole country – as *knowledge society* – in *education*, modernisation and *curriculum development*: *information skills* belong to *key competences*, like *digital literacy, learning skills, social competences, business competences* and *language skills*, and are near to *ICT* skills. The Ministry of Social Affairs, in its *National Plan for Social Inclusion (2004-2006)* dated 2004, has focused on *e-inclusion*, and on the development of *Internet access* and *computer literacy*, in which *IL* has been resorbed, according to what has happened in most of Europe.
Both the other Estonian initiatives are undertaken by a LIS scientist, Sirje Virkus, in a *European* perspective: the survey-report is the repeatedly mentioned article dated 2003; the project is a study investigating the *IL development* in *European higher open and distance learning* (ODL).
In **Latvia** the Ministry of Education and Science has identified *information skills* as a cornerstone of the educational reform: in the National report *Development of education* (2004), it has emphasised, according to the modern teaching methods, the importance of "skills to operate with information in many different ways" in the general *Education Curricular Reform Plan* approved in 2001; in the National report *Education and training 2010* (2005) information skills (*skills to operate with information*) are essential for the *curricular reform* and for successful *lifelong learning*. The same Ministry, through the Curriculum Development and Examination Centre, has set *Standards for compulsory education* for *Latvian language* and for *Literature*. In the first *Standard* information competences/skills include to know how to work with information, and, within the *communicative competence*, the focus is on *reading, writing* and *critical evaluation* of information; they also fall within the *socio-cultural competence* and the *learning competence*, together with *learning strategies, learning tasks* and *language* skills (*mother tongue, second language* and *foreign languages*). In the second *Standard*, the communication facet of IL, i.e. the production of different types of *writing*, is more stressed.
Furthermore, a European project, *DELCIS - Distance Education for Librarians: Creating an Information-Competent Society* (2001-2002), was carried out by a LIS university[21] and a library[22]. It has developed an *e-education programme* concerning *ICT skills* and *ICT training for librarians* and LIS professionals in Lithuania and Latvia. Building the *information competent society, the Internet* and Internet searching are central: *Internet skills* and *search(ing) skills* (*search tools, search strategies, search engines*) are close to *ICT skills* and linked to the *virtual learning environment* and *independent study*.
Lithuania shows a deep sensitivity towards the *information culture* – term preferred to *information literacy*, which is also used – and a widespread awareness of its crucial relevance.
Two legislative acts of the Parliament have designed the national education policy. The *Law on education* – promulgated on several occasions between 1991 and 2006[23] – has provided for the

[21] The Continuing Education Centre for Librarians belonging to the University of Latvia.
[22] The Riga Central Library.
[23] Its chronological extremes are eloquent in themselves: from the year in which Lithuania gained independence from the URSS (1991), until 2004, in which year the country became a EU member-State, and beyond. The overall aim has been evidently to achieve a real European integration.

modernisation of the national education system, intervening on contents and methods: thereby *information culture* and *IL* are associated with *self-education, continuous independent learning,* and with *knowledge seeking* and *knowledge society.* The *National education strategy 2003-2012* (2003) has tied *information culture* on the one hand to *computer literacy,* and on the other hand to educational revolution in the *knowledge society,* as the related terms demonstrate: *literacy skills, critical thinking, problem solving skills, ability to learn, individual project activity, active learning methods, learning process, changing role of teacher,* who instead of "the holder of knowledge" has become "the organiser of the learning process... learning adviser, partner, mediator between the learner and... sources of information".

The policy documents issued by the Ministry of Education and Science has closely connected information culture/information skills with ICTs. Within the Country report 2003-2004, in the *Strategies for teaching Lithuanian language* and *foreign language, information culture* – repeatedly defined as "knowledge of native and foreign languages and computer literacy" – is one of the basic skills needed for the *information society* and the *know-how society,* which thus require *information skills, metacognitive skills, communicative skills* and *thinking (intellectual) skills,* all associated to *problem solving, critical thinking, ability to learn,* and aimed at *autonomous learning* and *lifelong learning.* The *Strategy for the implementation of ICTs in vocational training* (2004) focuses on *ICT skills* and on *training in information culture*; it also emphasises the importance of *Internet searching* as well as the role of *libraries,* which "must become centres for fostering students' information culture". *School librarians* and their teaching and pedagogical role are once more in the foreground. The *Strategy for the introduction of ICTs into the Lithuanian education for 2005-2007* (2004) is centred on the massive spread of *informational and technological literacy* in order to ensure *equal opportunities* for all students, and on the use of *constructivist methods. Information culture* and *lifelong learning* are again among the pillars of the *information society.* The *General programme for principal education on ITs* (2005) has connected *independent* learning, *search for knowledge, processing of information, logic and systematic thinking* of *schoolchildren* to the acquisition of *computer literacy* and *informational culture.* The *Teachers' computer driving license standard* (2001) has pointed out that "computer literacy should be understood in a broader sense as the knowledge of employment of ICT in education and as a level of general information culture of the educator". Therefore teachers today should be able to effectively integrate *ICTs* into *educational processes* and to develop *information culture* of students and their own. For this purpose, they should possess adequate *Internet* skills, *information competencies, media* literacy, and finally the ability to find, use and produce *educational information.* The *Students' general computer literacy standard* (2002) focuses "general computer and information literacy", which includes *learning and working skills, communication skills, problem solving* and *research skills, critical thinking* and *evaluation skills.* Within the *Computer literacy standard of school librarians* (2002) the *computer literacy* encompasses *computer skills* as well as *information skills* ("an ability to use these skills in searching for, collecting and processing ICT information"). Hence *school librarians* – regarded as *educators* – are entrusted with "information skills' education" of teachers and students. In the vision of the *Strategy of schools' provision with computer teaching aids* (2002) the primary goal is "To integrate education of information culture into the total general education school educational process", by connecting more strongly *information skills* embedded in the *curricula* with disciplinary teaching practices, i.e. by effectively integrating IL into *subjects.*

The projects reflect on one side the precocious activism of the university libraries and a marked interest for the professional development of librarians, and on the other side the international vocation of the country.

The DEDICATE project – one of the pioneer experiences (1997-1999) in the European IL field – has been aimed at the development of *distance education* courses on *IL*; although it was set up on the initiative of a Swedish academic library, a Lithuanian university library, the

Library of the Kaunas University of Technology, has been a highly motivated, enterprising and dynamic partner. The library is still at the core of the community development in the *Library - community public information centre* project (2003-2004), established by the Lithuanian Regional Research Institute, and targeted at *librarians* and *remote local communities*. Specialised training courses on IL have been organised for the library employees, in order to promote the *information and knowledge society*.
Also the DELCIS project, carried out by a LIS Department, is targeted at *librarians*. The main result has been the development of a *distance education program in ICT* (2001-2002), which has become an "integral part of continuing education" for LIS professionals. The related keywords are the following: *ICT competencies*, *ICT skills training of information professionals*, *Internet* skills, *Internet search*, and *search(ing) skills*.
The international project *Reading and writing for critical thinking (RWCT) project in Lithuania* (1997-2000), started on the initiative of a public interuniversity centre, is centred on *students' information skills*, conspicuously lacking but crucial for the success of an *educational reform* that involves the whole educational system from primary school to university. It is aimed at enhancing active *citizenship* and *democracy* (*democratic pedagogy*), according to modern didactics, and to constructivist and cognitive pedagogy. In order to turn Lithuania into a a true *open society*, it is necessary to act on *reading*, *writing*, *information skills* and *debate* skills – all skills essential for *critical thinking* – and thus on *teacher training*, i.e. on *professional development* for teachers and teacher educators. The *Critical thinking development in higher education* (2002-2003) has linked *critical thinking* to *academic curricula*, trying to integrate it into them. Within an overall modernisation of HE, which privileges skills and methodologies and not only general education contents, lecturers, through *critical thinking teaching*, should develop students' IL/information skills as an essential requirement for *active* and *independent learning*, and for *lifelong learning*, focussing specifically on *writing* skills for *critical thinking development* and on *attitudes towards scientific texts reading*.
The project *Window to the future* (2002-2008), established by the Information Society Development Committee under the Governement, is intended to promote *education of e-citizens*, in order to achieve *active citizenship*; the word cluster entails *information skills* and *information search*, connected with *the Internet* usage and *computer literacy*.
Finally, some policy measures have been taken at **European level**, from very different backgrounds.
The most recent policy document is the *Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning*. IL is not distinguished as an autonomous competence, but distributed throughout two of the *eight key competences*: the first, *communication in the mother tongue*, and the fourth, *digital competence*. It is intimately tied to the educational renewal, an urgency for the EU. Therefore information skills are associated not only to ICT skills, but also to the *responsible use of the interactive media*, to *communication* skills, *Internet* skills, *media* literacy, *critical thinking* and *learning to learn*.
The second one, dated March 2004, came from a specialised and sectional field: it is the *European Guide to good Practice in Knowledge Management*, produced by the European Committee for Standardization (CEN). In the *Part 1 - KM Framework* the *personal knowledge capabilities* as "enablers for KM" share several features with information skills, as regards knowledge searching (*search(ing) skills, search strategies*), its critical selection, communication and spread (*communication* skills). In the *Part 5 - Terminology*, among the *core competences* "critical to [the] success" of organisations in KM there is *information literacy*, close to *a sharing culture*. This is an individual and, at the same time, community and shared dimension of IL, which finds many confirmations in broader and more heterogeneous spheres than KM.

All the work performed until now and still in progress, and the size of gathered material constitute the foundation of a thesaurus devoted to the Culture of Information/Information Literacy. Through a fruitful confrontation with the current European experiences – for ex. the recent German glossary on IL[24] – it will be tried to give prominence to its typically European character, taking into account the current dominant tendency in European education, and in particular the pervasive learning dimension, and simultaneously preserving and even emphasising the originality of our perspective, focussing on policies and innovativeness of research activities.

[24] Or, more exactly, of IL concepts. Cf. Klein, Annette - Mitschang, Jonas - Nilges, Annemarie (2008), Aus der Praxis für die Praxis: Ein Glossar zu Begriffen der Informationskompetenz. *Bibliotheksdienst*, *42*(1), p. 60-68.

Design criteria of the website

Anna Perin[1]

How the website[2] has been built

Preparing the draft of the website tree and the layout of pages, two main issues – which are at the basis of every website – have been considered:

- the *nature of contents*: a thematic portal, organised on country- and typology-basis, within which a simple entry scheme has been used in order to classify the IL initiatives;
- the *target audience*, international, diversified and, for the most part, of scientific area.

Moreover, the following parameters have been respected.

1. *Creating pages quick to upload*: considering the upload time, a clean and light graphics has been chosen. Since the gateway is a large section of the EnIL website, the same background and font settings have been maintained. Nevertheless, a specific logo has been used and the starting theme ("compasses" of Microsoft Front Page) has been customised, modifying the font colour (blue and blue tones instead of green and green tones, used for the EnIL website), in order to better characterise the area of the Observatory, although the general appearance has remained identical. Other adaptations of the theme have been introduced to improve and refine the overall graphical look, for ex. changing the colour of the hyperlinks and of the titles.
2. *Accessibility and usability*: attention has been paid to compatibility and accessibility, using various browsers, without any distracting special effects and taking into account that there are monitor resolutions different from the most common 1024x768, 800x600 and 640x480 pixels, which are however preferred by groups of surfers that cannot be excluded. Thanks to its high readability also if the font sizes are very small and to its widespread diffusion, the international font "Verdana" has been adopted for the text, 8 font-sized for the country entries and for the initiative entries, and 10 font sized for the headings and for the home page.
3. *Web pages easy to print*: the setting of the initiative entries allows, in most cases, the print of one entry on only one page (A4 format); the text colour (dark blue) has been adopted in order to not interfere with the black and white print.
4. *Content organisation and classification exploiting an intuitive navigation structure*: on the basis of the statistics on the websites' use, it has been verified that most users visit not more than 3-4 pages per session; therefore it is fundamental to build a tree of well-defined webpage levels, which allow quick passages towards the final destination without too many intermediate steps, since they could distract or bother the user. The website of the EnIL gateway has a tree of 3 levels + 1:

Home Page
↓
Country Entry
↓
Initiative Entry → pop-up for the Initiative Entry (when needed)

[1] Italian National Research Council. Ceris Institute. Responsible of the Library - Turin, Italy

[2] The URL of the home page of the EnIL gateway is *http://www.ceris.cnr.it/Basili/EnIL/gateway/gatewayhome.htm*.

Therefore, in the homepage there are the links to the country directories, without further passages. For each level of the website tree, meta keywords have been inserted into the HTML code on each web page.

5. *Use of effective titles, which reflect the page contents, so as to make not misleading the provided indication:* it has been tried to title the webpages so that they can be easily identified; at the same time, the synthesis criterion has been regularly applied to the page titles.
6. *Quality of contents and updatings:* contents – mostly institutional, scientific and academic – are obviously relevant; also the updates are important, since the Observatory contains references to universities and institutions, and a huge number of external links.

How it has developed

Organisation of contents

Via the home page *http://www.ceris.cnr.it/Basili/EnIL/gateway/gatewayhome.htm* the country pages are reached. 25 member States of the European Union have been already planned, and the correspondent flag has been associated to the name of each country. In the lower section of the home page there are links to the main EnIL pages and to the home page of the Ceris website.

On the right side of the display there are a short description of the Observatory, the link to the questionnaire/form to submit new initiatives, significant news and the project team.

In particular, the web form can be reached via the home page of the gateway and can be filled in by everyone who would like to bring to the attention an IL initiative. The compilation results have been saved in a non-linked HTM file, and afterwards have been reviewed and transformed into a initiative record entry.

The web page of the single country also presents its respective flag. According to the typologies, the initiatives have been grouped into macro-areas, in a table format.

From the country entry, the links direct to the third level of the tree built for the gateway, that is the entry proper. It is divided up into three parts in a table format, and, in the lower part, is provided with a back link to the homepage.

For some larger initiatives, there is a parallel third level of the tree, constituted by pop-ups customised, as for dimension, to the actual space occupied by the text. These pop-ups allow further deepenings, among which there is also the complete translation of original contributions into English: for ex. the German survey-report *The study reform as a chance for the university libraries*, (pp. 184-190). In particular, through *ad hoc* pop-ups, in the lower part of the entry an optional section – *Further information* – is committed to the promoters of initiatives.

Future perspectives

A more visual approach to the country entries is under sifting, through a clickable European map.

In order to make information retrieval more effective and quick, it will be useful to add a search engine within the gateway and a linked site map available on home page.

Finally, due to the continuous increase of the pages, in order to avoid dead links the need for monitoring and checking the functioning of external links and for updating continually the site has been growing.

Policy initiatives

Recommendation of the European Parliament and of the Council on key competences for lifelong learning

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/europe/EUkeycompetences.htm
Original website:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:EN:PDF

Date: 18 December 2006

Institutions:
- European Parliament *<http://www.europarl.europa.eu/parliament/public.do?language=en>*
- Council of the European Union
  <http://consilium.europa.eu/showPage.asp?id=242&lang=en&mode=g>

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GOL03A012
L-2929 Luxembourg
Fax: (352) 43 00 27 072
Council of the European Union
Rue de la Loi, 175
B-1048 Bruxelles
Tel.: (32-2) 281 61 11
Fax: (32-2) 281 69 34

L 394/10 "Official Journal of the European Union" 30.12.2006

Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning

(2006/962/EC)

Brussels, 18 December 2006

"THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION
[...]
HEREBY RECOMMEND:
That Member States develop the provision of key competences for all as part of their lifelong learning strategies, including their strategies for achieving universal literacy, and use the 'Key Competences for Lifelong Learning — A European Reference Framework' (hereinafter referred to as 'the Reference Framework') in the Annex hereto as a reference tool..." (p. 1-2)

ANNEX
KEY COMPETENCES FOR LIFELONG LEARNING - A EUROPEAN REFERENCE FRAMEWORK

Background and aims
"As globalisation continues to confront the European Union with new challenges, each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world.
[...]
In this context, the main aims of the Reference Framework are to:
1) identify and define the key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society;
2) support Member States' work in ensuring that by the end of initial education and training young people have developed the key competences to a level that equips them for adult life and which forms a basis for further learning and working life, and that adults are able to develop and update their key competences throughout their lives;
3) provide a European level reference tool for policy makers, education providers, employers, and learners themselves to facilitate national and European level efforts towards commonly agreed objectives;
4) provide a framework for further action at Community level both within the Education and Training 2010 work programme and within the Community Education and Training Programmes.

Key Competences
Competences are defined here as a combination of knowledge, skills and attitudes appropriate to the context. Key competences are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment.

The Reference Framework sets out ***eight key competences:***
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; and
8) Cultural awareness and expression.

The key competences are all considered equally important, because each of them can contribute to a successful life in a knowledge society. Many of the competences overlap and interlock: aspects essential to one domain will support competence in another. Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT) is an essential foundation for learning, and learning to learn supports all learning activities. There are a number of themes that are applied throughout the Reference Framework: critical thinking, creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings play a role in all eight key competences.

1. Communication in the mother tongue
Essential knowledge, skills and attitudes related to this competence:
[...] ***This competence also includes the abilities to distinguish and use different types of texts, to search for, collect and process information, to use aids, and to formulate and express one's oral and written arguments in a convincing way appropriate to the context.***" (p. 4-5)

"***4. Digital competence***
Definition:
Digital competence involves the confident and critical use of Information Society Technology (IST) [...] *It is underpinned by basic skills in ICT:* ***the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.***
Essential knowledge, skills and attitudes related to this competence:
Digital competence requires a sound understanding and knowledge of the nature, role and opportunities of IST in everyday contexts: in personal and social life as well as at work. This includes main computer applications such as word processing, spreadsheets, databases, ***information storage and management, and an understanding of the opportunities and potential risks of the Internet and communication via electronic media*** *(e-mail, network tools)* ***for work, leisure, information sharing and collaborative networking, learning and research. Individuals should also*** *understand how IST can support creativity and innovation, and* ***be aware of issues around the validity and reliability of information available and of the legal and ethical principles involved in the interactive use of IST.***
Skills needed include the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognising the links. Individuals should have skills to use tools to produce, present and understand complex information and the ability to access, search and use internet-based services. Individuals should also be able to use IST to support critical thinking, creativity, and innovation.

Use of IST requires a critical and reflective attitude towards available information and a responsible use of the interactive media. *An interest in engaging in communities and networks for cultural, social and/or professional purposes also supports this competence.*

5. Learning to learn

Definition:

'Learning to learn' is the ability to pursue and persist in learning, to organise one's own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skills as well as seeking and making use of guidance. Learning to learn engages learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts: at home, at work, in education and training. Motivation and confidence are crucial to an individual's competence.

Essential knowledge, skills and attitudes related to this competence:

[...]

Learning to learn skills require firstly the acquisition of the fundamental basic skills such as literacy, numeracy and ICT skills that are necessary for further learning. Building on these skills, an individual should be able to access, gain, process and assimilate new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate." (p. 5-6)

European Guide to good Practice in Knowledge Management Part 1: *Knowledge Management Framework*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/europe/CEN_KM.htm
Original website:
ftp://cenftp1.cenorm.be/PUBLIC/CWAs/e-Europe/KM/CWA14924-01-2004-Mar.pdf

Date: March 2004

Institution:
European Committee for Standardization <*http://www.cen.eu/cenorm/homepage.htm*>

Bruxelles

Address:
European Committee for Standardization
36 rue de Stassart, B
1050 Brussels
Tel.: +32 2 550 08 11
Fax: +32 2 550 08 19

CEN - Comité Européen de Normalisation
(=European Committee for Standardization) publications. Knowledge Management

CEN WORKSHOP AGREEMENT CWA 14924-1

March 2004

European Guide to good Practice in Knowledge Management Part 1: *Knowledge Management Framework*

CWA 14924-1:2004 (E)

Enablers for KM - Personal knowledge capabilities
Skills
"The skills that a person needs to perform the core knowledge processing activities efficiently are often overlooked. Some of these personal KM skills include:

- *being aware of how to make tacit knowledge explicit*
- *encourage sharing of knowledge through the development of active listening skills – such as replaying in one's own words what a colleague has said, in order to check if the understanding is correct*
- *how to communicate knowledge effectively to others*
- *how to structure knowledge in documents in a reader friendly manner*
- *how to define effective search strategies and to understand the query results adequately*
- *how to select and use external knowledge (e.g. content from third parties).*

These personal skills could be evaluated through 'knowledge skill tests' and improved through training and learning by doing. If these capabilities are actively developed (e.g. by learning and education) and encouraged, then, over time, a more 'knowledge conscious behaviour' should be witnessed within both the individual and the wider organization." (p. 13)

European Guide to good Practice in Knowledge Management Part 5: *KM Terminology*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/europe/CEN_KM1.htm
Original website:
ftp://cenftp1.cenorm.be/PUBLIC/CWAs/e-Europe/KM/CWA14924-05-2004-Mar.pdf

Date: November 2003 - March 2004

Institution:
European Committee for Standardization <*http://www.cen.eu/cenorm/homepage.htm*>

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CEN - Comité Européen de Normalisation
(=European Committee for Standardization) publications. Knowledge Management

CEN WORKSHOP AGREEMENT CWA 14924-5

November 2003 - March 2004

European Guide to good Practice in Knowledge Management Part 5: *KM Terminology*

CWA 14924-5:2004 (E)

Glossary of terms

Definitions
"***4. Core Competences:*** *The set of skills, experience and attributes recognized by an organization as critical to their success in KM. – for example:* ***information literacy****, a sharing culture etc.*" (p. 9)

Federal Ministry for Education, Science and Culture, *New media in teaching – Experiences from the first leg.* Final report

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/austria/BMBWK.htm*
Original website: *http://www.bmukk.gv.at/medienpool/10780/neuemedien.pdf* (in German)

Date: November 2003

Institution:
Federal Ministry for Education, Science and Culture (BMBWK).
From March 2007 Federal Ministry for Education, the Arts and Culture (BMUKK)
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New media in teaching - Experiences from the first leg
Final report

Publisher (Herausgeber):
Federal Ministry for Education, Science and Culture - Bundesministerium für Bildung, Wissenschaft und Kultur (BMBWK)
Section VII/10 – Study innovations, academic research demands
1014 Vienna

Vienna, November 2003

Organisation and staff development at the educational institutions

Ada Pellert

"In order to effectively integrate new media into daily teaching activities of Austrian universities and polytechnics, accompanying measures are necessary in the field of organisation and staff development." (p. 20)

I. Organisation development

II. Staff development

"The use of new media in teaching produces qualification demands at different levels.
[...]
Experiences from the projects developed within the "New media" initiative should be evaluated for designing further and continuing education measures.
[...]
The whole community in the third sector... has the opportunity to turn topics tested in the "New media" forum and through the server.project (as ***media didactics, information literacy, knowledge management****) and further and continuing education measures into competence key issues, which the different universities can attend to."* (p. 21)

Federal Ministry for Education, Science and Culture, *The multimedia school library*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/austria/multimedia.htm*
Original website: *http://www.bmukk.gv.at/medienpool/11285/SB_Multimedia.pdf* (in German)

Date: 2003

Institution:
Federal Ministry for Education, Science and Culture (BMBWK).
From March 2007 Federal Ministry for Education, the Arts and Culture (BMUKK)
<http://www.bmukk.gv.at/index.xml>

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The multimedia school library

Publisher (Herausgeber)
Federal Ministry for Education, Science and Culture - Bundesministerium für Bildung, Wissenschaft und Kultur (BMBWK)

Vienna 2003

Main contents

1. Introduction
"This report demonstrates the important role of the multimedia school library for the current knowledge acquirement and the future school development and provides support for school librarians for the establishment and management of the multimedia school library.
[...]
The report is the result of the second phase of the project work carried out by a group of 6 school librarians, which has been required by the Federal Ministry for Education, Science and Culture with the task of 'developing a model for the multimedia school library in the secondary schools with the collaboration of school librarians'.
The Austrian model of the ***central library in secondary schools with the collaboration of students*** *– existing for about 20 years – represented the starting point."* (p. 7)

2. Evaluation

3. Feedback of the school librarians
*"The project report '****Development of a model for the multimedia school library****' was made available to interested librarians at home and abroad."* (p. 57)
Two seminars were held in **November 2001** and **May 2003**.
[...]
Outcomes of the second seminar
With regard to the content, the idea of the multimedia school library is undisputed among the ARGE managers. In the meanwhile the integration of new media into the school library is a matter of course. [...] *In general an* ***agreement about learning objectives in the library (media literacy, information literacy, research skills,*** *etc.)* ***prevails****. On the contrary, about the assignment of responsibilities in teaching within and through the multimedia school library there is however still a disagreement. There is a demand for action concerning the support of the technical infrastructure of the multimedia school library. A good co-operation with the informatics curators is generally necessary.*
There are different requirements and points of view in the position of school librarians, and in training and continuing education. On both sides, there are measures to be taken in order to improve co-ordination." (p. 59)

4. Description of the multimedia school library

5. Realisation

6. Project schools

7. Training and continuing education: fundamentals

Federal Ministry for Education, Science and Culture, *The multimedia school library - Outcomes*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/austria/outcomes.htm*
Original website: *http://www.bmukk.gv.at/medienpool/4901/Schbibl2.pdf* (in German)

Date: April 2001

Institution:
Federal Ministry for Education, Science and Culture (BMBWK).
From March 2007 Federal Ministry for Education, the Arts and Culture (BMUKK)
<http://www.bmukk.gv.at/index.xml>

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The multimedia school library - Outcomes

Publisher (Herausgeber)
Federal Ministry for Education, Science and Culture - Bundesministerium für Bildung, Wissenschaft und Kultur (BMBWK)

Vienna, April 2001

Main contents

Functions of the multimedia school library

- **Teaching contents**
  ***"Reading literacy** (a large spectrum of different reading techniques)*
  ***Methodical competence** (work techniques, extracting, task analysis, from the formulation of the problem to the final product, organisation of material, citation methods, methods of scientific work)*
  ***Media literacy** (acquisition, presentation, communication / transmission)*
  ***Information literacy** (i.e. the ability to find and use that information, which is needed for the related task)*
  ***Achievement of a social and communicative competence** at school with new learning forms, that demand in particular a high degree of self-control. Self management – an important requirement for life-long learning – can be learnt and practised in the multimedia school library. Also in order to present its own results, the multimedia school library provides an ideal framework..."* (p. 64)
- **Social function**
  "In particular the level of information literacy increasingly produces knowledge differences. Who always has the Internet and CD-ROMs available at home and is still counselled by parents or elder sisters and brothers on their appropriate use, can much better acquire and train the skills today necessary than those who are socially weaker. Here the multimedia school library can afford a certain compensation." (p. 65)

Infrastructure - technical equipment

Space requirements

Library management supported by EDP (Electronic Data Processing)

Library organisation

Media stock

Utilisation

Information literacy

"It ranges from rather simple management of equipments and programs to the higher ability to extract knowledge from information and cognition from knowledge."
The following skills and techniques *"can be learnt and practised in the multimedia school library:*

- *Technical and manual skills*
- *To handle web browsers, text processing, multitasking, etc.*

- *To research, elaborate and present*
- *To search*
- *To select*
- *To evaluate*
- *To summarise*
- *To bring together and*
- *To produce from different materials for manifold themes."* (p. 83)

Collaborators

Cooperation

The librarian in the multimedia school library

The school librarian as educator

"As a consequence of the integration of new media, educational skills and competencies of school librarians are particularly required"... (p. 88)
The school librarian "*manages and attends*

- *To teaching and learning activities in the library and*
- *To the sensible use of media in the freetime."* (p. 89)

Target groups: teachers, students (at times parents and staff)
The activities are carried out in presence (in the library, in the classroom) and online (via the Internet, through e-mails).

"The ***contents*** *concern above all*

- *Introduction to using media in the library,*
- *Transmission of* ***interdisciplinary, general competencies... (reading literacy, methodical competence, information literacy, media literacy)*** *and*
- *Teaching in and through the multimedia school library from the planning to the finished product and the post-processing.*

At the same time it is necessary to aim at:

- ***Analysing*** *the teaching event in the school library;*
- ***Collecting and documenting*** *teaching experiences*
- ***Evaluating*** *the teaching event*
- ***Communicating*** *the teaching event."* (p. 89)

Methods *and* ***transmission forms*** *cover the whole spectrum of the current teaching. They range from frontal lessons across open learning forms to the point of one-on-one interview."* (p. 90)

Federal Ministry for Education, Science and Culture, *Report about universities 2002*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/austria/report2002.htm*
Original website: *http://www.bmukk.gv.at/medienpool/8330/hb_2002_bd1.pdf* (in German)

Date: 2002

Institution:
Federal Ministry for Education, Science and Culture (BMBWK).
From March 2007 Federal Ministry for Education, the Arts and Culture (BMUKK)
<http://www.bmukk.gv.at/index.xml>

Vienna

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Report about universities

Federal Ministry for Education, Science and Culture - Bundesministerium für Bildung, Wissenschaft und Kultur (BMBWK)

Vienna, 2002

Main contents

The university organisation reform

Teaching and research at universities
The development program "Multimedia educational materials" and the initiative "New media in teaching at universities and polytechnics"
"Through the 3-years key initiative 'New media in teaching at universities and polytechnics'... a framework plan for promoting the adoption of new media in the tertiary sector has been developed. [...]
The goals of the initiative are to contribute through teaching innovations to quality improvement and internalisation, to enhance contacts and cooperation between educational institutions and to facilitate the access to education for non-traditional students and for people interested in further education (lifelong learning).
The following measures have been proposed:

- ***The set-up of an educational network**, in order to make the online offers of the Austrian educational institutions available both at home and abroad;*
- ***A call for tenders**: the subsidy programme should encourage competition within universities and polytechnics and step up the development and use of new multimedia and interactive teaching and study tools;*
- ***The improvement of advanced training possibilities for teachers**, in order to encourage the communication of **media and information literacy**, consultancy and advice functions in the new learning process.*

[...]
As first step of the implementation of the initiative members from universities and polytechnics have joined forces to provide the networking platform **New Media Forum.***"* (p. 43-44)

New developments in the tertiary sector

Funding universities

Women at universities

International mobility and cooperation in academic education and research

Counselling and support of students

Students, graduates and graduate employment

Quality assurance: new organisation for data and information provision

A shorter English version is freely available online at:
http://www.nml.at/WEM2002/en/nml.htm **(Project: New media in teaching at universities and polytechnics in Austria).**

Act on Guidance in Relation to Choice of Education, Training and Career

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/act_on_guidance.htm
Original website: *http://eng.uvm.dk/guidance/guidance.doc*

Date: 30 April 2003

Institution:
Danish Parliament, the Folketing *<http://www.ft.dk/?/samling/20042/menu/00000005.htm>*

Copenhagen

Address:
Folketinget, Christiansborg
1240 København K.
33 37 55 00

Act on Guidance in Relation to Choice of Education, Training and Career (English Translation)

5 key parts:

1. **Targets of guidance in relation to choice of education, training and career**
   It is pointed out that *"guidance shall contribute to **improving the individual's ability to seek and use information, including IT-based information and guidance, about choice of education, educational institution and future career.**"* (p. 1)

2. **Guidance in relation to choice of youth education and training and career and Youth Guidance Centres**

3. **Guidance in relation to choice of higher education and training and career**

4. **Nationwide activity and organisation**

5. **Provisions regarding the coming into force of the Act etc.**
   It is specified that *"This Act shall **come into force on 1 August 2004**"* and *"will be reviewed in the sessional year 2007-2008 of the Danish Parliament."* (p. 5)

The Danish Ministry of Education, *Guidance in Education - A new guidance system in Denmark*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Danish_Ministry_of_Education.htm
Original website: *http://pub.uvm.dk/2004/guidance/hel.pdf*

Date: December 2004

Institution:
Danish Ministry of Education <*http://eng.uvm.dk/*>

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The Publishing Office of the Danish Ministry of Education
Strandgade 100 D
DK-1401 Copenhagen K.
Tel.: +45 3392 5220
Fax: +45 3392 5219

The Danish Ministry of Education, *Guidance in Education - A new guidance system in Denmark*

Published by the Danish Ministry of Education
Edited by Inge L. Kjæær & Merete M. Thorsen
Division for Guidance - Ministry of Education

1st edition, 1st impression, **December 2004**

Printed in Denmark 2004

*"**Provision of educational and vocational guidance for pupils and students** in the education system and **for young people outside** education and employment is given high priority in Denmark.*
*In **April 2003**, the Danish parliament adopted a new **Act on Guidance**, as a result of which a comprehensive restructuring of guidance services in the educational system was initiated.*
[...]
***The new guidance system became operational 1 August 2004**. The Ministry of Education has been responsible for the implementation of the Danish guidance reform, and it has a controlling and coordinating role in relation to the new guidance system.*
*This publication gives an **overview of the key elements of the reform and the new Danish guidance system in the educational sector. The reform is primarily concerned with guidance services for young people.**"* (p. 1)

Main contents

The Danish Ministry of Education and the Danish Ministry of Science, Technology and Innovation, *Enhanced Internationalisation of Danish Education and Training*. Policy Paper to Parliament

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Enhanced_Internationalisation.htm
Original website: *http://pub.uvm.dk/2004/internationalisation/index.html*

Date: April 2004

Institutions:
- The Danish Ministry of Education <*http://eng.uvm.dk/*>
- The Danish Ministry of Science, Technology and Innovation <*http://videnskabsministeriet.dk/site/frontpage*>

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The Danish Ministry of Education and the Danish Ministry of Science, Technology and Innovation, *Enhanced Internationalisation of Danish Education and Training*. Policy Paper to Parliament

April 2004

*"The publication contains the **Danish Minister of Education** and **Minister of Science, Technology and Innovation's policy paper to Parliament on enhanced internationalisation of Danish education and training and a proposal for a coherent strategy** in this respect.*

...

The Policy Paper was submitted to Parliament in April 2004."

Main contents:

Preface

1. Internationalisation of education

2. The Government's strategy for internationalising education

3. Appendices

Appendix 1: The Bologna Declaration on higher education

Appendix 2: The Copenhagen Declaration on the vocational education and training sector

Appendix 3: Objectives report: Different systems, common aims for 2010
It is highlighted that *"With a view to contributing to the strategic aims for Europe set out at the meeting of the European Council in Lisbon in 2000, **EU education ministers approved three strategic aims for the next ten years at the Council meeting of 12 February 2001. The three strategic aims are divided into 13 subsidiary aims:***

Aim 1: Improve the quality and efficiency of the education and vocational training systems in the European Union
1.1 Improve the education of teachers and lecturers
1.2 Develop skills for the knowledge society
- Improve literacy and numeracy skills
- **Adapt the definition of basic skills for the knowledge-based society**
- Maintain the ability to learn

1.3 Ensure access to information and communication technology for all
- Computers for schools and learning centres
- **Involve teachers and lecturers**
- **Use of networks and resources**

1.4 Increase access to scientific and technical studies
1.5 Make optimal use of resources
- Improve quality assurance
- **Ensure efficient use of resources**

Aim 2: To facilitate access to the education and vocational training systems for everyone
2.1 Open learning environment
2.2 Making education more attractive
2.3 Support for active citizenship, equal opportunities and social cohesion

Aim 3: To make the education and vocational training systems more open to the outside world

Appendix 4: The Lisbon Convention

Appendix 5: Mobility statistics

Appendix 6: Enhanced Internationalisation of Education – Summary of strategy and actions

Ministry of Science, Technology and Innovation, *Key Figures on the Danish Information Society 2005 - Danish Figures*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Ministry_of_Science.htm
Original website: *http://www.vtu.dk/fsk/ITC/KeyfiguresontheDK2005DanishFigures.pdf*

Date: June 2005

Institutions:
- Statistics Denmark <*http://www.dst.dk/HomeUK.aspx*>
- Ministry of Science, Technology and Innovation <*http://videnskabsministeriet.dk/site/frontpage*>

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Ministry of Science, Technology and Innovation, *Key Figures on the Danish Information Society 2005 – Danish Figures*

Published by:
Statistics Denmark
Ministry of Science, Technology and Innovation

June 2005

Printed by: Statistics Denmark, Copenhagen

Printed version:
ISBN 87-501-1472-7
ISSN 1604-8253

Web version:
ISBN 87-501-1473-5
ISSN 1604-8261

Translation:
Mette Shannon

Main contents:

Introduction
"**Key figures on the Danish Information Society 2005 - Danish Figures** *is the second publication of key figures aimed at providing* ***an overview of the development in the Danish information society.***
The sources are statistics on ICT usage by individuals, the business sector and the public sector. Moreover, register data are applied to illustrate the Danish ICT sector and the ICT skills of the labour force. In addition to data from Statistics Denmark, the publication includes figures from the National IT and Telecom Agency and the Danish Centre for Studies in Research and Research." (p. 7)

1. **Economic consequences of ICT**
2. **The ICT sector**
3. **The digital citizen**
4. **The digital business sector**
5. **The digital public sector**
   Use of public digital services by citizens and enterprises
   It is pointed out that *"In 2004, **84 per cent of enterprises and 43 per cent of the population used public digital services to search for information on web sites,** download forms and submit web forms. The number of users among the population has been relatively constant since 2002, whereas the number of enterprises has increased somewhat.*

Among Danish citizens, information searches are more common than more advanced communication. *In 2004, 42 per cent searched for information on official sites, 16 per cent downloaded forms and 14 per cent submitted information to the authorities."* (p. 31)

6. **ICT infrastructure**

7. **ICT security**

8. **E-skills**
   Lack of E-skills among enterprises and public authorities
   It is highlighted that *"**The lack of E-skills is among the barriers to ICT usage experienced by enterprises and public authorities.** More specifically, it is about **the lack of staff with E-skills in-house and problems of recruiting staff with Eskills.**"... "The importance of both barriers decreased considerably from 1999 to 2004 in respect of enterprises. Particularly regarding difficulty in recruiting staff with E-skills, the figure dropped from 16 per cent of enterprises in 1999 to 4 per cent in 2004."* (p. 52)
   Use of the Internet for educational purposes
   "In 2004, 17 per cent of the population had used the Internet within the last month for purposes relating to education and training. Correspondingly, 9 per cent of enterprises used the Internet for training of their staff in 2004.
   Accordingly, Internet use for education and training has increased slightly over the last two years among both citizens and enterprises. For enterprises, by 1 percentage point from 2002 to 2004, and for the population by 2 percentage points from 2003 to 2004." (p. 53)

9. **ICT for all**
   The population's communication with public authorities over the Internet
   *"In 2004, 43 per cent of the population had used the Internet for interaction with public authorities. **Interaction with public authorities covers finding information on official web sites,** downloading forms from public authority web sites and submitting information to public authorities."* (p. 57)
   Work-related purposes of Internet use outside the workplace
   *"**The most frequent work-related purpose for which most Danes use the Internet outside the workplace is to search for information in connection with their jobs.** In 2004, 23 per cent of the population had used the Internet for that purpose within the last month. This is an increase from 18 per cent in 2002 - corresponding to an increase by 5 percentage points.*
   The second most frequent purpose of using the Internet outside the workplace is to send/read e-mails relating to the job. In 2004, 19 per cent of the population used the Internet for that purpose outside their workplace." (p. 58)

10. **ICT research and innovation**

KVIS quality programme

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/KVIS.htm*
Original website: *http://www.kvis.org* (in Danish)

Start Date: January 2000
End Date: December 2006

Institution:
Danish Ministry of Education <*http://eng.uvm.dk/*>

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KVIS quality programme

KVIS is the Ministry of Education's national programme to the development and ensuring of quality in the special education.

The aim of the quality programme KVIS is **to increase the inclusiveness in the Folkeskole** and thereby ensuring that **all pupils receive a qualitative offer as close to their home and public school as possible.**

The quality programme KVIS deals with **eight themes decided by the Parliament:**

- Education individual planning and carrying out teaching
- Parents-school collaboration
- School structuring and teaching means
- Qualifications, management and teaching qualifications
- Transition from primary school to continued education and employment
- School-leisure time co-ordinated effort
- Infants
- Knowledge mediation, responsibility and task division, Dissemination.

Through the KVIS programme **collaborative and innovative networks among the schools** are being formed.
The KVIS programme **offers a number of IT supported courses for collaborative teacher groups.**
International school and **teaching co-operation** is a part of the KVIS programme's strategy to further and qualitative aim in the project.

Further information

The next pearl on the string?

The point European political and educational thinking have reached does not allow to add more pearls to the string, because of today's conviction that 'inclusive teaching' and 'accommodative learning' contain a way of thinking that corresponds to the actual ideals.
In Europe the term 'inclusion' is being used to underline a dynamic dimension and the obligation of the school to create teaching and learning environments and establish a level of co-operation that permit the individual pupil develop proficiency and social competencies co-operating with other pupils. Thus it is not sufficient to 'place' the pupil in the school, the pupil is expected to be a 'fellow player' in this community.
But a great qualitative 'quantum leap' is ahead in order to get practise be consistent with the vision.

The qualities can be illustrated as steps of a stairway leading to a still better recognition of the contents of the qualities the school must have in order to practise inclusive teaching:

- **Accommodative schooling, flexible teaching and learning (school's learning environments)**

Accommodative teaching means scope to be and learn in ordinary teaching and learning environments. That implies among other things that the school

recognizes that all pupils are different, that this diversity is being considered a strength, and that the teaching and learning environments are expected to offer the best opportunities to all pupils. Accommodative teaching also means removing the walls of the school and extending the concept of school to be a number of localities and opportunities (e.g. the use of electronic aids) for relevant learning.

• Relations, context and comprehensiveness (teachers' reflections)

These qualitative areas must be seen in connection with accommodative teaching as they are expressions of the school's attitudes, considerations and decisions. It is in this connection that the school throws overboard all categories of disability and diagnosis and looks at the pupils' potentials, competencies and developmental opportunities as relative phenomena that basically are being limited or strengthened by virtue of the surrounding environment. Therefore the teachers' reflections among other things will include principles for forming groups and ways of co-operation, and currently decide on the teacher's role in the pupils' learning process.

• Heterogeneity and apprenticeship (pupils' learning)

Heterogeneous communities (groupings) have a built-in dynamic that is able to accommodate teaching and bring about development in pupils with widely different potentials and competence profiles. It is the basic point of departure for that kind of groupings that diversity is a precondition for growth, personally and socially.

Heterogeneous groupings may be varyingly composed – according to the nature and aim of the task and the needs of the individual pupil. Thus composition of groups will continuously result from considerations in the team of teachers on the relation between the task and the needs of the individual pupil, including aims and challenges, task satisfaction, social confidence, etc.

Heterogeneous groupings contain a strong element of 'craft's apprenticeship' capable of strengthening competencies in co-operation with mates of different age and with other competence profiles, especially if the groups are working with cross disciplinary projects that in a natural way set the scene for co-operation and create opportunities for different approaches developing fantasy, energy, ability of co-operation, flexibility, etc.

• School's directive-signalling advisors

In connection with inclusive teaching it is decisively necessary that the advisors in the school are conscious of the fact that they are expected to be sparring partners of the school in order to develop the ordinary inclusive teaching and learning environments, and contemporarily reduce their work with individual pupils considered as isolated problem carrier. In other words there is a need for using the advisors competencies internally – in the teaching environments – and in dialogue with the school in order to offer a relevant teaching to all pupils, instead of pulling out the pupil for an evaluation outside the context.

Ministry of Education, *The Development of Education.* National Report of Estonia

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/estonia/Development_education.htm
Original website: *http://www.ibe.unesco.org/International/Ice/natrap/Estonia.pdf*

Date: August 2001

Institution:
Ministry of Education and Research *<http://vana.hm.ee/uus/hm/client/index.php?1>*

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Address:
Ministry of Education and Research
Munga 18
50088 Tartu
Phone: 07 350 222
Fax: 07 350 250

International Bureau of Education

The Development of Education
National Report of Estonia

by **Ministry of Education**

August 2001

Main contents

8. ability to communicate and cooperate;
9. ability and courage to generate new ideas, create new knowledge;
10. self-confidence, dignity, spirit of enterprise and activity;
[...]" (p. 43-44)

"***Topics common to all subjects in the syllabus*** *concern spheres of life which are vital for the development of students' personal and social development and which are not tackled separately under one subject... The following list of topics is compulsory, but each school can add its selection, e.g., production/consumption, creating/art, etc.*
1) Environment and sustainable development
2) Information technology and introduction to media. The ability to be an independent, critical and analytical consumer and a creator of information is developed in students. The students are also provided with information on the structure and qualities of information and on the systems of giving out and receiving information. The ability to interpret and to systematize information is also developed in students. The use of contemporary information technology *varies the teaching process and teaching methods, and it* ***helps to develop the ability of the students to think systematically and to acquire cursory skills of working with information.*** *It is also of great importance to the school's communication with other schools and with the world. In specifying the curriculum and the syllabi, the resources of the school as well as the subjects on which the school focuses on are kept in mind.*
3) Career guidance
4) Safety" (p. 45)

2.1.3 Teaching and learning strategies

"***The main competence area within the curriculum is the ability to learn and the readiness for lifelong learning, communication and technological skills.***
When learning-teaching, the learning process is planned in a way where the teacher is the planner and creator of learning activities as well as one who encourages students to learn. ***The teacher should be more and more able to help to direct the children in the information flow,*** *to make choices and to work with students from different surroundings and with different needs. The teacher is bound to follow humanistic principles and standards of professional ethics, including the right to choose methodology and means suitable to learning targets. The student is a conscious and active learner, the one who acquires knowledge, processes and assesses it. The success of learning depends on the ability of the learner to learn, therefore the development of learning skills during learning process is essential. Problem-solving, project-learning, topic-learning, both team and pair work are topical issues."* (p. 46)

SELECTED BIBLIOGRAPHY

Ministry of the Environment, *Estonian National Strategy on Sustainable Development. Sustainable Estonia 21 (SE21)*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/estonia/SE21.htm*
Original website:
http://www.envir.ee/orb.aw/class=file/action=preview/id=166311/SE21_eng_web.pdf

Date: 17 March 2005

Institution:
Ministry of the Environment <*http://www.envir.ee/53328*>

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Estonian National Strategy on Sustainable Development Sustainable Estonia 21 (SE21)

Estonian National Strategy on Sustainable Development. Sustainable Estonia 21 was developed under supervision of the Estonian Commission on Sustainable Development. **Tallinn Pedagogical University** (currently Tallinn University) was leader of the consortium developing the Strategy.

Estonian National Strategy on Sustainable Development. Sustainable Estonia 21 was approved

by **Estonian Government: 17 March 2005**
by **Estonian Parliament (Riigikogu): 14 September 2005**

Published by: Estonian Ministry of the Environment

Tallinn 2005

Main contents

INTRODUCTION

"The SE21 strategy is clearly focused on the sustainability of Estonia. The main task of the strategy is to answer the question of what should be done to ensure successful functioning of the Estonian society and state also in the longer term... As SE21 has a longer time horizon (30 years), it cannot focus only on today's concerns." (p. 4)

"SE21 was drawn up mainly by means of expert assessments based on studies conducted and data gathered earlier in the relevant fields... SE21 was prepared by five working groups with the participation of over 50 experts of different spheres of life. In parallel with the work of expert groups, the key aspects of the strategy were discussed with social partners, stakeholders and the public. In total, 32 seminars, round tables and discussion events were held with various partners from outside the expert groups." (p. 5)

"The strategy SE21 was drawn up by a consortium consisting of the following agencies:
Institute of International and Social Studies of Tallinn University;
Institute of Ecology of Tallinn University;
Estonian Institute for Future Studies;
Lõhmus, Haavel & Viisemann Ltd.;
Association of Estonian Engineers.
The Estonian Institute for Sustainable Development (SEI-Tallinn) participated as a partner." (p. 6)

Chapter I - CONTEXT AND GOALS

Chapter II - DEVELOPMENT OPTIONS OF ESTONIA

Chapter III - SYNTHESISED SCENARIO: ESTONIA AS A KNOWLEDGE SOCIETY

Chapter IV - COURSES OF ACTION

- **Course of action A: Transition to knowledge-based state governance**
- **Course of action B: Intellectual and social support to knowledge society**
- **Education**

"Bringing of the Estonian education policy into conformity with the principles established in the European Union." (p. 64)

*"**A central task is to supplement curricula with key competences** of particular importance **for the knowledge society**, such as **digital literacy, learning skills, social competences, business competences and language skills**. Acquiring of these key competences in all age groups, including the categories with a higher social and unemployment risk (older or less qualified workers, mothers returning to the labour market) is the main aim of lifelong learning. The Lisbon meeting recommended that the transformation of schools into multifunctional education and development centres should be supported to promote lifelong learning."* (p. 66)

*"**Curriculum development** - Movement towards the knowledge society implies also that the content of education is to be tailored to the expectations of this societal model. Curricula have to be significantly better equipped to develop the following abilities, skills and attitudes of students:*

- *learning ability and skills;*
- *ability to set goals, detect and solve problems;*
- *ability of abstract and systematic thinking, ability of critical analysis and reflexion, ability to synthesise;*
- *ability to make strategic choices and prognosticate risks and dangers;*
- *decision-making capability and responsibility, management and teamwork skills;*
- *ability of adequate self-expression and effective communication;*
- ***ability to use information and communication technologies (ICT), to process and create (search, systematise, structure, analyse, generalise, disseminate, exchange and store) information;***
- *ability and courage to generate ideas, create new knowledge;*
- *self-confidence, self-dignity, initiative and activity;*
- *honesty, reliability, clear ethical convictions;*
- *mastering of the national culture treasury, ability to understand other cultures, ability of intercultural communication..."* (p. 68)

Ministry of Social Affairs, *Estonia's National Plan for Social Inclusion (2004-2006)*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/estonia/Social_inclusion.htm*
Original website: *http://www.sm.ee/eng/HtmlPages/Estonia_NAP04-06_ENGL/$file/Estonia_NAP04-06_ENGL.doc*

Date: July 2004

Institution:
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Ministry of Social Affairs, *Estonia's National Plan for Social Inclusion (2004-2006)*

July 2004

Main contents

"The development of information and communication technology is coordinated at the national level by the Ministry of Economic Affairs and Communications which establishes the general targets and standards of the activities. The relevant agencies seek to decreasing exclusion by using ICT for example, the Ministry of Education and Research in the topic of education, the Ministry of Social Affairs in the field of labour etc. One of the key objectives of ICT activities is to improve access to ICT For that purpose the following steps are planned:

- ***Develop Internet access and computer literacy***
  [...] ***To improve information literacy*** *it is necessary that most of adults be able to use Internet at least at the elementary level.* ***For that purpose an expansion of computer-based study has been planned.*** *The objective is that 20,000 people participate each year in the project providing elementary computer skills training for free "Look@world".* (p. 42)
- ***Enhancing employment opportunities by using the potential of ICT***
- ***Regionally balanced opportunities for ICT development***
- ***Improvement of access to public sector websites***
- ***Faster implementation of projects enabling electronic communication with the state***

Ministry of Education, *Information Society Programme for Education, Training and Research 2004–2006*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Training.htm*
Original website:
http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2004/liitteet/opm_231_opm14.pdf?lang=en

Start Date: 2004
End Date: 2006

Institution:
Ministry of Education Finland <*http://www.minedu.fi/OPM/?lang=en*>

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Ministry of Education, *Information Society Programme for Education, Training and Research 2004–2006*

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ISBN 952-442-724-9 (PDF)
ISSN 1458-8110

"The actions included in this Information Society Programme fall into three categories: ***knowledge, content and the operating environment.*** *The implementers in these sectors are members of the information society, teaching and support personnel, pupils and students, and researchers.* ***The programme describes the measures to be taken by the educational administration in cooperation with other stakeholders.*** *In addition, the programme contains* ***recommendations to partners outside the educational administration.***" (p. 7)

Main contents

- **Introduction**
  "The ***Information Society Programme for Education, Training and Research 2004–2006*** *contains* ***major priorities and actions for boosting the information society development in the education, training and research.*** *It builds upon the information strategies of 1995–1999 and 2000–2004 and complements the Ministry of Education, Strategy 2015 and the Development Plan for Education and Research 2003–2008. The programme is targeted to all players in the education, training and research fields."* (p. 6)
  "The programme is geared
  1 to develop all citizens' information society knowledge and skills
  2 to enable educational institutions to use information and communications technology (ICT) in a versatile way in their activities
  3 to establish ICT-based procedures in education, training and research
  4 to promote social innovation through the use of ICT." (p. 7)

- **Background**
  It is stressed that *"The central government promotes information society development by ensuring access for all citizens to fast internet connections by* ***developing citizens' information society skills and knowledge by taking other education policy action and by investing in R&D.***" (p. 9)

- **Information Society Programme for Education and Research 2004–2006**
  One of the aims by 2007 is that *"Finland is an open and secure, networked society with high-level information society knowledge."* (p. 11)
  In regard to knowledge, it is essential "***The enhancement of information society knowledge and skills of every citizen and player in the information society*** *with a view to gaining access to and using and producing information society services."* (p. 12)
  In order to develop **knowledge in the information society**, it is emphasized the **key role** played by "***outside education*** *and* ***employment, libraries and civic organisations*** *in providing opportunities for people to learn* ***information society skills.***" (p. 13)

Within the **measures by the educational administration**, it is ensured that *"**The operations and resources of adult education institutions** will be increasingly **focused on studies improving information society skills** and use of ICT in education"* and that *"**Alongside the formal education system**, civic organisations will be supported in providing activities which promote **information society skills.**"* (p. 13)
Within the recommendations to partners (local authorities, maintaining organisations), it is underlined that *"**Public libraries** must have a sufficient number of **professionals with pedagogie competencies** (pedagogic information officers) **to translate information management skills into citizenship skills.**"* (p. 16)

- **Implementation of the programme**

Ministry of Education, *Strategy 2015*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/strategy.htm*
Original website:
http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2003/liitteet/opm_155_opm35.pdf?lang=en

Date: February 2003

Institution:
Ministry of Education Finland <http://www.minedu.fi/OPM/?lang=en>

Helsinki

Address:
Ministry of Education
Department for Education and Science Policy
Meritullinkatu 10, Helsinki
P.O. Box 29, FIN-00023 Government, Finland

Ministry of Education, *Strategy 2015*

Print: Yliopistopaino, Helsinki 2003
ISBN 952-442-517-3 (pbk)
ISBN 952-442-556-4 (PDF)
ISSN 1458-8110

*"**Strategy 2015 will guide the Ministry of Education in directing its sector.***
The implementation of the vision, operational idea, values and aims will be monitored.
The Strategy will guide the drafting of the Ministry's action and economic plan and the planning of target outcomes. ***The strategies devised by the Ministry for its two sectors – education and culture – will be based on the aims and policies outlined in the strategy."*** (p. 19)

Main contents:

- **The Ministry of Education Strategy is based on the values of civilisation, equality, creativity and welfare**
- **Securing educational and cultural equality**
- **Promoting intellectual growth and learning**
- **Increasing opportunities for participation**
- **Supporting the educational, cultural and economic competitiveness of Finnish society**
  It is stressed that *"Measures will be taken to promote the development of information society, information society skills, the content of information networks and the accessibility of network services."* (p. 14)
  In order to bring ***"Information society services within everyone's reach...*** *it is important to ensure* ***a balance between technological development and intellectual and cultural development.*** *Care must be taken to avert problems potentially arising from one-sided technology and excessive information floods.* ***Information society skills*** *also include* ***critical analysis of information and an ability to cull essential and relevant information.*** *The aim is to create favourable conditions for information society to develop further. Measures will be taken to enhance access to information and culture on the net.*
  A comprehensive library network provides access to information networks. Citizens' ICT and elearning skills will be upgraded and maintained in all the sectors of internationalisation of Finnish content creation." (p. 15)
- **Diversifying Finland's international influence**
- **Improving performance in the Ministry of Education sector.**

Ministry of Education, *Development Plan for Education and Research 2003-2008*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Education.htm*
Original website:
http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2004/liitteet/opm_190_opm08.pdf?lang=en

Start Date: 2003
End Date: 2008

Institution:
Ministry of Education Finland *<http://www.minedu.fi/OPM/?lang=en>*

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Ministry of Education
Department for Education and Science Policy
Meritullinkatu 10, Helsinki
P.O. Box 29, FIN-00023 Government, Finland

Ministry of Education, *Development Plan for Education and Research 2003-2008*

Printed by Helsinki University Press, 2004
ISBN 952-442-693-5 (pbk.)
ISBN 952-442-694-3 (PDF)
ISSN 1458-8110

Main contents

- **Changes in the operational environmental**
  It is pointed out that, within the present *"social and cultural change... **skill demands relating to the use, content and flows of information in the net are growing.**"* (p. 9)

- **Development lines in education and research**
  It is highlighted that *"care must be taken that education provides sufficient **knowledge and skills for assessing information content on the net and for managing information flows.**"* (p. 17)

- **Development of the education system**
  University education: it is underlined that *"a key challenge for all universities is to provide students with **skills to use scientific methods and the ability to produce and use knowledge independently.**"* (p. 47)
  Adult education and training: adult vocational training and liberal adult education will be targeted to offer opportunities for the adult population to gain **adequate information society skills** (p. 49).
  Liberal adult education: within the liberal adult education civic empowerment must be promoted and strengthened; **information society skills** must be improved (p. 52).

- **Development of the research system**
  Libraries' role in Finland is stressed: *"Libraries will contribute to the **development of teaching and study methods** and on their part **ensure that university and polytechnic graduates have good information literacy.**"* (p. 55)

The Information Society Council's report to the Finnish Government: Towards a Networked Finland

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Council.htm*
Original website:
http://www.tietoyhteiskuntaohjelma.fi/tietoyhteiskuntaneuvosto/en_GB/information_society_council/_files/112332970000 12864/default/TietoYnRap-Eng-7-6-05.pdf

Date: February 2005

Institution:
Information Society Council
<http://www.tietoyhteiskuntaohjelma.fi/tietoyhteiskuntaneuvosto/en_GB/information_society_council/>

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The **Information Society Council** is the body for negotiation and co-ordination among public administration, organisations and the private sector in steering the development of the information society.
Rich information about **its tasks and composition** can be found at:
http://www.tietoyhteiskuntaohjelma.fi/tietoyhteiskuntaneuvosto/en_GB/information_society_council/
Further information about **its activities** can be found at:
http://www.tietoyhteiskuntaohjelma.fi/en_GB/.

The Information Society Council's report to the Finnish Government: Towards a Networked Finland

Publisher: The Prime Minister's Office
ISBN: 952-5354-86-5

"The first report by the Information Society Council, led by Prime Minister Matti Vanhanen, concentrates on analysing the current situation of the Finnish information society, identifying goals for future development, and defining the means with which to achieve the those aims."
"On ***September 4th, 2003,*** *the Finnish government appointed the* ***Information Society Council*** *to act as* ***the negotiating and coordinating body between the various actors in society.*** *The Council, appointed for the term of the present government, consists of* ***key representatives of public administration, organisations and the private sector.***
In its first meeting on October 22nd, 2003, the Information Society Council announced its aim to promote open and constructive discussion, cooperation and common decisions."
[...]
One specific task of the Council is to provide an annual report on the development of information society in Finland. ***This is the first report by the Information Society Council.***
The report aims to provide an overall picture of the current stage of the information society in Finland and its challenges, *and* ***to outline actions with which to respond to these challenges."*** (p. 4)
"The central goal of this Information Society Council report is to analyse the development currently taking place in Finland as compared to European and worldwide trends, and to recommend tools for setting the direction of future development. The report is not, therefore, intended exclusively to provide a description of the ***Information Society Programme*** *and its advancement or to report on the activities of its sections. The analysis does, however, endeavour to take into account those aspects of the Information Society that the government has chosen to highlight in its own strategies.*
[...]
Three commentaries from actors outside of the Information Society Council have been included in this report." (p. 8)
"The sections of the Information Society Council have produced the following seven chapters, each of which describes the current state of the Finnish information society from the viewpoint of their respective focal areas, envisions desirable future scenarios and suggests measures for their achievement.
The final chapter contains a summary of the measures directing the development of the information society and draws together conclusions. Statistics describing the attainment of the aims set for the Programme and a list of legislative projects related to the information society are provided as appendices." (p. 9)

Main contents

INTRODUCTION

The Policy of the Finnish government

It is stated that *"The Information Society Programme is led and co-ordinated by the Prime Minister with the help of the Programme Director, operating from the Prime Minister's Office."* (p. 7)

"The programme consists of the following eight areas: telecommunications infrastructure and digital television; ***citizens' ability to function in the information society and make more efficient use of information society services; education and training, working life and research and development;*** *online services in public administration; the development of social welfare and health services through the means of the information society; the development of e-business and digital contents and services; government information management; and* ***legislative measures central to the promotion of the information society.***

The main priorities of the Information Society Programme have been defined in the government's strategy document. The plan for the programme's implementation, approved in April 2004, defines in concrete terms the projects to be carried out in the different sectors of the programme, and the authorities responsible for their execution. The ministerial group overseeing the implementation decided on the following ***five general priorities for the programme:*** *1) horizontal and vertical co-operation, 2) the development of service production with the help of new information and communication technologies, 3)* ***education, training and information society skills,*** *4) telecommunication infrastructure and 5) legislation and operating environment."* (p. 7-8)

IN DIALOGUE

- **Matti Lehti,** ***Information Society and Finland's Competitiveness***
- **Tarja Cronberg,** ***Alone in the Information Society***

  The three stages of the information society

  The author points out that *"The development of the information society can be described through three stages. The first stage is access to technology and existing networks."...*

  "The second stage of the information society is linked to competence and knowledge on the usage opportunities of the devices. *Aside from mastering the use of the technologies,* ***it is also important to possess the skills necessary for working-life participation in the information society. Knowledge of the basic rules and the capacity to move fluently along the highways and footpaths of information are requirements for obtaining a driving license in the information society."***

  "The third and most important stage of information society citizenship is the 'membership card" phase, which entails actual participation in the communities of the information society.' (p. 12)

  A membership card to the information society

  She notices that *"We are lacking a membership card to the information society and to local communities that we could see ourselves belonging to. Virtual communities, chatrooms and discussion boards are not enough; we have a pressing need for actual physical closeness."... "Support is needed to create and maintain common facilities, associations, youth work and culture. Also the skills of caring, communication and living together require support and practice."*

In this regard, she stresses **the public libraries' role**: *"**Public libraries are in a key position in this development**. They constitute **a genuine space in the information society**, the meaning of which has been obliterated in the technology fever of recent years."... "Libraries carry out important social work for the prevention of loneliness, and this work also includes young people. **It is libraries that enable the participation of everyone in the information society**. With a view to the future development of the information society, it is particularly important that **libraries are near to everyone and that, in addition to the newest technologies, they also contain capable instructors.**"* (p. 13)

- **Teppo Turkki, *The Asian Pioneers of the Information Society***

ANALISYING THE DIFFERENT ASPECTS OF THE INFORMATION SOCIETY

- **The Development of e-Business – Electronic business and digital content section**

- **Telecommunications and Digital Television – Telecommunication infrastructure and digital television section**

- **Working life: From Information Society to Innovation Society – Working life section**

- **Electronic Government – Online services of public administration section**

- **Information and Communication Technology in Social Welfare and Health Care – Social welfare and health care section**
  Future: From development projects to new ways of functioning
  It is highlighted that *"In addition to this development work, it is necessary **to provide citizens** with opportunities to acquire **the necessary information society skills** and gain access to related services." ... "**The development of information society skills among the working population** affects their well-being at work and the way in which they perceive their chances to manage the changing demands of working life. This is **a prominent issue particularly among ageing workers.**"* (p. 63)

- **Proposed actions**
  "The actions proposed by the Social Welfare and Health Care Section emphasise concrete actions to be taken in the next few years." (p. 64)
  With regard to national level services, education, research and development, it is ensured that *"**The strengthening of information society skills will be aimed for in basic and continuing education**. The use of online education and video conferencing must be developed in continuing education in the field."* (p. 65)

- **Product Development – Education, research and product development sector**
  It is underlined that *"**From the viewpoint of education, research and product development**, a central success factor is that the whole, encompassing the three aspects, functions as well as possible. In this way, we can direct our common efforts and competence to **the generally aspired direction of the promotion of the information society. All decisions and actions must be based on a common vision.**"* (p. 69)

APPENDICES

Citizen Skills in a Dynamic Civil Society – Citizens' skills in the information society section

English outline in EnIL: *http://www.cens.cnr.it/Basili/EnIL/gateway/finland/Council2.htm*
Original website:
http://www.tietoyhteiskuntaohjelma.fi/tietoyhteiskuntaneuvosto/en_GB/information_society_council/_files/11233297000012864/default/TietoYnRap-Eng-7-6-05.pdf

Date: February 2005

Institution:
Information Society Council
<http://www.tietoyhteiskuntaohjelma.fi/tietoyhteiskuntaneuvosto/en_GB/information_society_council/>

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Citizen Skills in a Dynamic Civil Society – Citizens' skills in the information society section

The polyhedral nature and the importance of citizen skills are stressed: *"Observed from the viewpoint of citizen skills, in addition to the use of the basic technological tools, the need to develop individual work methods and activity springing from personal motives is highlighted." ... "The Citizens' Skills in the Information Society Section aims to strengthen the* ***notion of citizens as being active in their everyday lives." ... "Citizen skills must be understood here in a broad sense****. For instance, terms such as digital literacy, media literacy and ICT skills narrow the viewpoint to public media and the mastering of the technologies." "... people's skills and their relationship to the information society are constructed* ***from a vast spectrum of factors."*** (p. 73)

The citizen skills required by the use of information and communication technologies

"Citizen skills consist of three factors: the motivation of the individual, the competence of the individual and access to relevant technologies.

The motivation of individuals originates largely in their need to function in society and their immediate environment. ***People's perception of the information society and their own membership in it is intellectual. This concerns the person's capacities for structuring information, such as analysing and conceptualising****. However, a person's association with his or her community takes place also on the emotional level, thus necessitating other kinds of skills, such as participation and belonging and working together in a group. On the level of society, competencies associated with the strength of will and capacity for action play a primary role.*

In the realm of competence, skills related to the use of technology, communication, retrieval and exploitation of information, consumer behaviour and acting in the information society are emphasised. Knowledge of the central concepts of the information society and the structures enabling acting in society also form a central aspect of competence. For instance, it is important to have a conception of online ethics and other rules of functioning on the Internet and to acquire at least some knowledge of media and source criticism.

In addition, full participation in the information society presumes technical access to the information network (Internet connection) and the networks of people beyond it (see Table 8)." (p. 74-75)

It is pointed out that *"****The development of citizens' information society skills (citizen skills) can be construed in different ways****, for instance according to levels. The different levels of citizen skills can in this context be conceived of* ***as levels of basic, unaffected and proactive use."*** (p. 75)

With regard to **information retrieval**, it is underlined that *"****The use of Internet search engines is routine among Internet users.*** *Almost 80 percent of under 40-year-olds and 60 percent of over 40-year-olds somewhat or fully agree with this statement.* ***Searching for information on products and services rates close to email in citizens' use of the Internet."*** (p. 78)

Libraries' role is stressed: *"For many people, their initiation into the routines of information retrieval has taken place on a terminal in a library, searching for information with the help of library personnel. In Finland, 47 percent of the population or 2.4 million people are registered library users. According to some studies, as many as 80 percent of them use the library actively in their daily lives. Libraries can thus be said to reach a significant portion*

*of citizens. A library network of some 1,000 service points covers the entire country."... "**The libraries should also be able to provide more instruction in the use of appliances, the network and online services.***
In many ways, Finnish libraries have been pioneers in their field." (p. 78)
"The amount of material available online has exploded. The aim of the libraries is to complement existing search engines by developing increasingly sophisticated information retrieval solutions with features for the evaluation of information and the opportunity to restrict the amount of data tracked."
[...]
*"All public libraries offer PCs with an Internet connection for use by the public. **Information forums and various information services provided by libraries indicate that people require personal instruction in the use of various devices as well as in the use of online services."*** (p. 79)

With regard to **information needs of young people**, it is noticed that they *"are catered for by the **Finnish Youth Information Network**, covering more than thirty local youth information services throughout the country. **In addition to information seeking, a central aspect of the youth information services is processing the information together with the young person."*** (p. 79)

*"In terms of **citizens' information society skills, the use of online services**, such as online shopping and banking, presume **access to the network, the ability to navigate the Internet as well as the capacity to assess the reliability of the information** and take the necessary precautions to ensure privacy protection and information security."* (p. 79)

"Education and training have made relatively broad use of different online services, both to support the work of teachers and to help students in organising their studies and provide assistance for independent studies.** Educational institutions, such as community colleges and adult education centres, that support the **continuous education of adults** are making their services available over the Internet, and **in many institutions certain study modules are implemented partly or wholly online. In addition, online learning material and interaction are increasingly becoming a part of regular courses." (p. 80)

With regard **to mass communication**, the importance of **media education** is stressed: its objective *"**is to prepare citizens for the use of different media** (radio, television, films, advertising, video, press, electronic communications) **as both the recipient and sender of messages. The objective is fluent media literacy or the skill of reading and writing media** which means **the capacity of citizens to critically interpret and create media texts: verbal, visual, vocal or different combinations of these. Media skills** have become **part of a new kind of communicative general education."*** (p. 81-82)
*"More recently, **the promotion of media related skills has been incorporated as one of the topics of adult education programmes."*** (p. 82)

Among the **proposed actions**, there are the following ones:
*"**The development of citizens' information society skills should be observed through various reports and studies** on the basis of the structure, differentiating between the levels of basic use, unaffected use and proactive use."* (p. 84)
*'**Education, training and instruction at all levels is highly necessary. The Finnish Adult Education Association has produced a recommendation for a study module about information society skills.** The type of education advocated in the recommendation should be widely available to citizens. **The recommendation stresses information society***

skills as an integral part of the life of an active citizen. The study module would concentrate on the viewpoint of the user of information and communication technologies and the application of different knowledge and skills in everyday life. *The study module would correspond to* ***8–12 ECTS credits, covering the following areas: on the road to the information society, ICT usage skills, networking and communication skills, and skills as consumers and service users.*** *The general aim is that everyone who wanted to could participate in the training. The organised training should also build upon and enlarge the network of professionals trained to support and instruct people in daily life situations and to promote the achievement of goals of different directions and levels."* (p. 85)

Table 8. **Skills needed in a civil society today and in the future**

User's need	***Motivation***	***Competence***	***Connection***
1. *Maintaining contact*	*Structuring, belonging, doing, civic participation, maintaining contact to others, stuaies, free-time activities*	*Social, communicative and technological skills*	*Telephone, mobile phone, camera phone, SMS, group SMS, email, MMS, instant messaging, phone circle, voice mail, etc.*
2. Information seeking	***Learning, information seeking, working, curiosity, remaining up to date, problem-solving, etc.***	***Finding information, assessing the truth value of information, verifying information, assessing the context of the information, etc.***	***Telephone, Internet connection, search engines***
3. *Online services (purchases, administrative services, banking services, studying, democracy, expressions of opinion)*	*Efficiency, easy accessibility at all, times and locations, ease of use, etc.*	*Technical skills, information security skills, skills in banking and other management of affairs, finding appropriate services, ordering products and services, etc.*	*PC, connection to the Internet, mobile phone, SMS, GPRS phone, bank account, information security services, etc.*
4. *Automatic information and process systems*	*Efficient and economical, professional competence*	*Technical skills, organisational skills, archiving skills, etc.*	*PC, Internet connection, necessary databases, computing software, information security software*
5. *Mass communication (journalism, communication, advertising, marketing)*	*Desire to act as a member of the civil society, publicity, education, entertainment, remaining up to date*	*Skills of functioning as a citizen, publication skills, media skills, ability to install and use a digital receiver, ability to tune and use different channels*	*(Digital) television, radio, video, newspapers, magazines, publication software, etc.*
6. *Media culture (games, music, films, learning material, art, etc.)*	*Entertainment, learning, leisure activities*	*Technical skills required by gaming, understanding the logic of games, multimedia literacy, skills related to studying, etc.*	*Efficient PCs for work, games software, learning platforms, fast Internet connection, etc.*
7. *Own content production and self-expression*	*Self-expression, distributing personal knowledge, desire to state thoughts and opinions, political participation*	*Both content and technological know-how: writing, filming, editing, publishing, etc.*	*PC, camera phone, Internet connection, digital camera and video camera, word, image, video, and sound processing software, publication software*

Ministry of Education, *Education and Culture*. Annual report

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/education_culture.htm*
Original website:
http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2006/liitteet/opm28.pdf?lang=en

Date: 2006

Institution:
Ministry of Education Finland <*http://www.minedu.fi/OPM/?lang=en*>

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Ministry of Education, *Education and Culture.* Annual report

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ISSN: 1458-8110

Vision

"Finland is a Nordic welfare society, where education and training, culture and science are the key factors for the citizens' well-being, as well as for the Finnish economy and modern civilisation."

The operation idea

"As part of the Government, the Ministry of Education is responsible for developing education, science, cultural, sport and youth policies, and international co-operation in these fields. The Ministry ***promotes education and culture****, creates favourable conditions for the* ***production and diffusion of knowledge, for lifelong learning and creativity, and for citizens' participation and well-being****."*

Main contents:

- **In the headlines in 2005**
- **Introduction**
- **Education and science policy**

  Two-tier degree structure for universities

  "The prerequisites for research and teaching were enhanced... Project funding was allocated to information society projects, to the development of learning processes and environments, and to the improvement of the research environment." (p. 15)

  More stability to the operational resources of adult education

  "Approximately 22,000 people took part in continuing education for teachers provided by the state in accordance with the focus areas of the educational policy. In addition, ***funds were allocated*** *to national continuing education programmes in vocational education and training and liberal adult education (TUKEVA, VSOP) and* ***to providing training for support and advisory staff who educate citizens in information society skills****. The participation of underrepresented population groups in liberal adult education was promoted with the help of guideline steering. The availability of language and cultural education for immigrants,* ***basic information society skills education and education enhancing capabilities to participate in the civic society was increased****."* (p. 16)

- **Culture, sports and youth policies**

  Public library services promoted access to information and culture

  *"****Public libraries realise the basic rights in a democratic society*** *by promoting access to knowledge and culture, and by* ***supporting citizenship skills in the information society****. The impact of libraries is evident in* ***all learning, social participation, mental development of people and well-being****.*

[...] *In accordance with the government's Information Society Programme, the acquisition of public computer terminals was supported and continuing education for the library personnel in web services was arranged in all regions.*" (p. 21)

Copyright legislation amendments came into force from the beginning of 2006

"*The amendments to the Copyright Act, Chapter 49 of the Penal Code and the Copyright Decree came into effect in the beginning of 2006. Legislation required for the approval of WIPO (World Intellectual Property Organisation) agreements was passed. In conjunction with the amendments to the Copyright Act, the Parliament passed three resolutions, the most central of which stipulates the followup on the possibilities of protection technology and private copying and the promotion of voluntary measures to make private copying possible.*

[...] ***Co-operation projects promoting knowledge and competence in copyright matters were launched*** *in order to, among other things, provide basic teaching materials.* ***A comprehensive charting of the training needs and the planning of training*** *were also commenced.*" (p. 22)

- **International co-operation in education and culture**
- **Church affairs**
- **The financing of education and culture and administrative development**

Citizenship skills in the information society

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Citizenship.htm*
Original website: *http://www.minedu.fi/julkaisut/pdf/tietostrategia/toimeenpanosuunnitelmaENG.pdf*
(removed in 2006)

Start Date: 2000
End Date: 2004

Institution:
Ministry of Education Finland <*http://www.minedu.fi/OPM/?lang=en*>

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In: Ministry of Education, *Information Strategy for Education and Research 2000-2004 Implementation Plan*, p. 5-7

Helsinki : Ministry of Education, 2000

The objectives for the project **Citizenship Skills in the Information Society** are the following:

- It defines the citizenship skills needed in the information society: contents and aims.
- It determines and prioritises the target groups.
- It encourages and motivates people to learn these citizenship skills.
- It determines the broadly based, cooperative learning programme with all its pilot projects.
- It creates a cooperation network and basic conditions for the implementation of the programme.
- It calls upon local authorities and civic organisations to join the programme.
- It stimulates continuing professional education in the field of education, guidance, counselling and promotes a change in work.
- It highlights the information society services and tools needed by all.

In an information society, citizenship skills must meet the needs of a networking, constantly changing and internationalising way of life.

These **citizenship skills** are:

1 Technical skills,

2 Communication skills,

3 **Skills in acquiring and using information,**

4 Consumer skills, and

5 Influence on information society policy.

Applying the idea of self-motivated learning with a special effort to reach all population groups. attention is focused on the needs of groups outside the education system and staff development and training:

- Middle-aged and older population,
- Adult population not actively employed, and
- Special-needs groups.

Projects and partners

The action programme is composed of the following projects:

1 A learning and motivation campaign for the population as a whole;

2 A know-how project implemented by a large cooperation network, and its pilot projects;

3 A project coordinated by local authorities and geared to local needs;

4 Input by civic organisations and civic activity;

5 Teaching, library and advisory personnel's know-how; and

6 Access to the net and net services to all citizens.

The major partners are
- Adult education institutions and higher education institutions,
- Libraries,
- The Finnish Broadcasting Company and other media,
- Civic organisations and social partners,
- Top business enterprises in the field, and
- Experts and administrators responsible for basic services.

See also: *http://www.ictliteracy.info/rf.pdf/WhitePaperEnglish.pdf* (p. 61)

Ministry of Education, *Library Strategy 2010 – Policy for access to knowledge and culture*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/library_strategy.htm*
Original website: *http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2003/liitteet/opm_156_kseng.pdf?lang=en*

Date: 2003

Institution:
Ministry of Education Finland <*http://www.minedu.fi/OPM/?lang=en*>

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Library Strategy 2010
Policy of the Finnish Ministry of Education for ensuring access to knowledge and culture. Public Libraries

Printed in: Edita Prima Oy, Helsinki 2003

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"The Library Strategy is the foundation stone of the Ministry of Education's plan for operations and finance; it is crucial to deciding on targets for project finance. The Strategy is to be revised annually.
It constitutes part of the Ministry of Education's Strategy 2010, and also the Strategy for the Cultural Information Society 2003-2006. The Strategy follows EU guidelines in matters concerning the information society, electronic communication, regional equality and developing libraries. It is in line with, for instance, the Ministry of Education's Information Strategy for Education and Research, and with its Strategy for Production of Contents.
The aim is to offer all citizens equal access to culture and information sources, so public libraries should develop into hybrid libraries. It is guaranteed that the national library network is operating in a way that serves the citizens, regional and knowledge-based inequalities are eliminated." (p. 24)

Main contents:

- **Summary**
  It is highlighted that *"The ability to manage the flow of information is emerging as a civic skill of great importance, as well as a part of learning on all levels."* (p. 7)

- **Library Strategy 2010 – starting points**

  Values
  Among ***"the basic values of the information society"*** are ***"the right and ability to make use of information"*** (p. 10). It is stressed that *"For the knowledge-based society, and for education,* ***the library*** *is particularly important* ***as promoter of literacy*** *and inspiration for reading. The traditional literacy is the basis for* ***media literacy, which includes the ability to search for relevant information from both printed and electronic sources, the ability to evaluate and compare various information sources and the skill to apply knowledge for one's own use."*** (p. 11)

  The vision
  It is emphasised **the role of Finnish public libraries.** *"Library competence, the ability to handle information, is becoming a vital citizen skill, and constitutes an essential element in all learning and teaching."* (p. 11) ***"During the next few years the significance of the library will increase,*** *since the significance of the web and electronic communication is brought out only when the contents are being used, and ultimately* ***by how well users have the chance and ability to utilise the information in their lives."*** (p. 12)

The Hybrid Library – a "combination library": Its service, traditionally aimed at the local society and interest groups, includes *"guiding pupils and groups of various ages, **teaching information retrieval**, cooperating with local bodies and authorities."* (p. 14) ***"Individual and group instruction is provided for schools, teachers and pupils** of various ages in how to look for information."* (p. 15) Among new services are *"Production and publication of contents related to collections, databases, services and library know-how, mainly via the Internet. Examples of such pages are those giving **guidance to information retrieval...**"* (p. 16)

Challenges and needs for development

It is exposed that *"Library know-how is not generally appreciated (for instance, the skill to manage information is crucial for all learning, or when teaching methods change – many fail to realise this)."* (p. 19) *"The information provision for education and pupils has been neglected... Many teachers have received no training in managing information, although this skill is of great help when teaching methods are being developed and changed."* (p. 22)

- ## Measures and suggested steps

Library strategy

First stage of the Strategy: the Action Plan - It is stressed that *"A first prerequisite for developing information provision for all is that skilled staff be available."* There's a clear need for *"**Pedagogical information specialists**. A new working pattern and a national responsibility for information provision aimed at pupils, and collaboration between school and library. **The teaching of skills for mastering information is to be integrated in every subject on curricula.**"* (p. 25)

Second stage of the Strategy: the Action Plan carried out - Key issues are: *"Teacher training including information management. Information provision for pupils in comprehensive schools, upper secondary schools and vocational education."* (p. 25)

Policy for division of labour between local authorities and the state

Tasks for municipalities – Information provision for learners: *"Though municipalities have the right and responsibility to decide on matters of information provision for pupils and their education, **the Ministry considers it important that municipalities draw up clear plans to ensure that teachers and pupils gain skills to master information**; that necessary material and equipment is acquired, that continuity can be guaranteed for those schools without their own, professionally developed library and that collaboration between schools and public libraries can be carried out in a way that satisfies both parties, that there is agreement on costs, and that **the teaching of skills for mastering information is integrated in all subjects on the curricula.**"* (p. 27-28)

Measures for the state - Measures for the Ministry of Education, in respect of paragraph 16 of the Finnish Constitution 731/1999: *"Through project financing, public libraries receive support for producing contents for web-services, for cooperation between municipal libraries and various administrative branches, for promoting written culture and both new and traditional literacies."* (p. 29)

Further information

The **Library Strategy 2010** is a **national strategy**, there are also **annual state grants for regional and local projects.**
Promoting information literacy is part of **every day work at the libraries,** serving **schools, students** and **ali other citizens.**

According to the **Finnish Library Act**, the objective of library services is to promote equal opportunities among citizens for personal cultivation, for literary and cultural pursuits, for continuous development of knowledge, personal skills and civic skills and for lifelong learning.
The Strategy is **a policy for ensuring access to knowledge and culture** - by well-equipped libraries and a well-functioning national library network, by educated staff, by developing library services and by cooperation with other actors in the field of education and culture.
Regional and local projects are supported by annual state grants.

A Wide Range of Culture and Quality Information Retrieval in the Library

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Culture.htm*
Original website: *http://www.minedu.fi/export/sites/default/OPM/Kirjastot/linjaukset_ja_hankkeet/kirpol_eng.pdf*

Date: December 2000

Institution:
Ministry of Education. Library Policy Committee

Helsinki

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A Wide Range of Culture and Quality Information Retrieval in the Library. The salient points and proposals in the Finnish Library Policy Programme 2001-2004. Committee's report

Library Policy Committee
Helsinki, December 2000
Finnish Ministry of Education, Helsinki 2001
ISBN 952-442-209-3

"The Library Policy Committee appointed by the Ministry of Education in 1999 worked for two years to identify the challenges arising in the civil information society and seek concrete solutions to them. This document is a summary of the salient points of the Committee's report." (p. 1)

Added value of the library in the use of information networks
It is pointed out that *"Information retrieval skills and knowledge of information sources are expanding to include electronic materials. Libraries analyse, classify and describe information for use in retrieval systems and thereby help their clients to find what they are looking for. On the net,* ***libraries*** *answer clients' questions about information, offer access to library collections and information retrieval tools, and* ***instruct users in information retrieval.***" (p. 9)

Access to information
It is stressed that *"Access to information is facilitated by the* ***public library,*** [...]
- ***whose staff are able to instruct individuals in information management,*** *and*
- *whose staff* ***help individuals find the essential in a mass of data and information and use it.***" (p. 9)

Citizenship in the information society
It is highlighted that "***A full-fledged citizen of the information society must have right and access to information and the ability to find and produce knowledge.*** *New technological applications entail new kinds of citizenship skills. Minimum access to information means that each citizen gets information about existing knowledge (metadata).*
Preconditions for citizenship in the information society
- *Information society infrastructure*
- ***Basic information society rights***
- ***Information society citizenship skills.***" (p. 10)

"In order to succeed in the information society and to use his/her own creative capacity, the individual needs more and more competencies and comprehension skills. The basic values and equal citizenship will not be realised if people do not have these skills.
Information society citizenship skills
- *Traditional literacy*
- *Computer literacy*
- ***Information literacy***
- *Media literacy*
- ***Information retrieval skills***

- ***Information acquisition skills***
- *Skills in creating cultural meanings*
- ***Information production skills.***

The growing use of information networks and the accelerating rate of knowledge accumulation requires skills in information management and retrieval, which are the traditional core competence of the library.
The library institution constitutes a comprehensive educational, cultural and technical information service infrastructure. Its provision realises the basic rights, provides information, knowledge and culture, and ***teaches citizenship skill needed in the information society****. The* ***public library*** *takes care of information management and the availability of public information, knowledge and culture in the information society."* (p. 11)

Ministry of Education, *Education, Training and Research in the Information Society.* A National strategy for 2000-2004

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/National_strategy.htm*
Original website: *http://www.minedu.fi/julkaisut/information/englishU/welcome.html* (removed in 2006)

Start Date: 2000
End Date: 2004

Institution:
Ministry of Education Finland <*http://www.minedu.fi/OPM/?lang=en*>

Helsinki

Address:
Ministry of Education
Department for Education and Science Policy
Meritullinkatu 10, Helsinki
P.O. Box 29, FIN-00023 Government, Finland

Ministry of Education, *Education, Training and Research in the Information Society.* A National strategy for 2000-2004

Helsinki : Ministry of Education, **1999**
ISBN 952-442-228-X

Main contents:

- **Framework for the strategy reform**
- **National strategy for education, training and research in the information society 2000-2004**
  Vision: *"The overall theme of the strategy, the systematic development of learning environments based on research, can be divided into* ***six sub-themes****:*
  Information society skills for all
  The information society skills of educational staff
  The knowledge of professionals in the information and content industries
  The consolidation of virtual learning environments
  Electronic publication, classification, and distribution of research information and teaching material
  Strengthening the structures of the information society.
  Education and knowledge
  Information society skills for ali
  It is ensured that:
  *"****Projects*** *will be supported* ***to develop the information society skills of girls and women.***
  The opportunities for ***liberal education*** *and* ***the open university*** *to provide education in* ***information society skills*** *will be increased, with special attention given to the* ***ageing population.***
  The competencies of adult educators to provide training in information society skills *will be improved."*
  Planning of education and educational establishments - Out of the classroom into an open learning environment
  It is stressed that *"To meet the increasing knowledge and skills requirements of the information society, learning environments will be developed to improve the quality of learning."* Within **network learning environments** *"Students will also practice their skills of communicating, acquiring and managing information."*
  Special focus on educational staff and teacher education
  "During the new strategy period ***the training of educational staff and the development of teacher education*** *will be given* ***special emphasis.***" Among the main needs of educational staff is the **training in** ***"obtaining, managing and evaluating information".***
  Information contents and services that support education, training and research
  It is ensured that *"****Cooperation will be developed between public libraries and libraries in schools and educational establishments in providing training in information management skills."***
- **Implementation of the national strategy for education, training and research in the information society**
- **Evaluation of monitoring**

Federal Ministry of Education and Research, *Future of the scientific and technical information.* Final report

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/technical_information.htm
Original website: *http://www.bmbf.de/pub/zukunft_der_wti_in_deutschland.pdf* (in German)

Date: September 2002

Institution:
Federal Ministry of Education and Research <*http://www.bmbf.de/en/index.php*>

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Federal Ministry of Education and Research
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Fax: 01888/57- 83601

Future of the scientific and technical information. Final report

Publisher (Herausgeber)
Federai Ministry of Education and Research - Bundesministerium für Bildung und Forschung (BMBF)
Referat Öffentlichkeitsarbeit
53170 Bonn

A study of the Federal Ministry of Education and Research (BMBF).
Arthur D. Little – Global Management Consulting and the (German) Society for Innovation Research and Consultancy Ltd. were commissioned jointly by the Federal Ministry of Education and Research to provide the report.

Bonn, September 2002

Main contents

- SUMMARY
  "It is recommended to support the further development of the scientific and technical information (STI) through the BMBF in a new program. This program should
  - ***emphasize the role of STI users and their needs***
  - ***aim at optimising the STI provision and supply***
  - ***consider the development phase of the markets, technologies and STI structures, as well as its increasing globalisation and marketing.***

  Besides the development of innovative sectors, a future STI policy with convenient and suitable key issues should also aim at accelerating the necessary changes of structures." (p. 1)

  Action areas and recommendations
  "*In order to ensure an effective STI use,* ***users' competencies must be enhanced and strengthened also in education and training.***
  The transmission of these competencies should become a more essential part of the academic teaching. *Therefore,* ***STI must be more integrated into teaching and teaching contents, and teachers' information competencies must be strengthened.***" (p. 5-6)

  Key issues concerning role and action of the BMBF
  1. Impulses to innovation
  Among the **recommended action areas** there are "***STI integration into teaching*** *and innovative education programs as well as new library plans.*" (p. 7)
  2. Strategic development of German STI structures
  3. Operational development of structures

- STI IN SCIENTIFIC PROCESS
- STI PROVISION AND SUPPLY IN GERMANY:
  CURRENT SITUATION AND DEVELOPMENT PERSPECTIVES

- **ACTION DEMAND AND ROLE OF STATES**
- **GUIDELINES FOR A FUTURE STI POLICY**
- **APPENDIX: REFERENCES.**

Federal Ministry of Education and Research, *Strategic Position Paper: Join information - Activate knowledge*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Join_information.htm*
Original website: *http://www.bmbf.de/pub/information_vernetzen-wissen_aktivieren.pdf* (in German)

Date: September 2002

Institution:
Federal Ministry of Education and Research <*http://www.bmbf.de/en/index.php*>

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Join information - Activate knowledge
Strategic position paper of the Federal Ministry of Education and Research for the future of scientific information in Germany

Publisher (Herausgeber)
Federal Ministry of Education and Research - Bundesministerium für Bildung und Forschung (BMBF)
Referat Öffentlichkeitsarbeit
53170 Bonn

Bonn, September 2002

Main contents

SECTION I

- **Scientific information as a key resource**

- **Strategic aims**
  "*The Federal Ministry of Education and Research will accompany the change of the models in scientific information with a* ***new development policy.***
  [...]
  This policy is connected with a ***state task... aiming at strengthening competencies of all citizens for an effective and critical use of information***". (p. 3)

- **Key issues**

  1. aim related to the **Science and Education Policy**
  It includes information supply and information literacy.
  "*Quick and free access to scientific information and an effective system of information supply in Science and Education are the highest priorities. From the point of view of a development policy the effective use of scientific information depends on skills and qualifications of information users ...* ***Information literacy,*** *i.e. the ability to inform oneself methodically and critically, should be considered -* ***like reading, writing and counting – a basic skill of a modern society.***" (p. 3)

  2. aim related to the **Research Policy**

  3. aim related to **Infrastructure**

Federal Ministry of Education and Research, *Federal report: Research 2004*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Ministry_Education.htm
Original website: *http://www.bmbf.de/pub/bufo2004.pdf* (in German)

Date: 2004

Institution:
Federal Ministry of Education and Research
<http://www.bmbf.de/en/index.php>

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Federal report: Research 2004 (Bundesbericht Forschung 2004)

Publisher (Herausgeber)
Federal Ministry of Education and Research - Bundesministerium für Bildung und Forschung (BMBF)
Publishing Section - Referat Publikationen; Internetredaktion
11055 Berlin

Bonn, Berlin 2004

Section III: Research and technology policy of the German Federation

Scientific and technical information in the worldwide connection
The increasing importance of **information literacy as a new basic literacy** is stressed.

"The Strategic Position Paper – *published in September 2002 by the* ***Federal Ministry of Education and Research*** *- underlines the following* ***3 high-priority aims:***

1. aim *related to the* ***Science and Education Policy: information supply and information literacy***
Quick and easy access to scientific information and an effective system of information supply in Science and Education are the highest priorities. From the point of view of a development policy the effective use of scientific information depends on skills and qualifications of information users ... ***Information literacy,*** *i.e. the ability to inform oneself methodically and critically, should be considered* ***- like reading, writing and counting – a basic skill of a modern society.***

2. aim *related to the* ***Research Policy: development of new services and digital information techniques***

3. aim related to Infrastructure: networks and flexibility" (p. 280-281)

Federal Ministry of Economics and Labour - Federal Ministry of Education and Research, *Information society - Germany 2006. Action programme of the Federal Government*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Information_society.htm
Original website: *http://www.bmbf.de/pub/aktionsprogramm_informationsgesellschaft_2006.pdf* (in German)

Date: December 2003

Institutions:
Federal Ministry of Education and Research <*http://www.bmbf.de/en/index.php*>
Federal Ministry of Economics and Labour <*http://www.bmwi.de/English/Navigation/root.html*>

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11019 Berlin
Bundesministerium für Bildung und Forschung
Referat LS 15 – Publikationen, Internetredaktion
Berlin office
Hannoversche Straße 28-30
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Fax: 01888/57- 83601

Information Society - Germany 2006. Action programme of the Federal Government
A new master plan for Germany's way to the Information Society

Publishers (Herausgebers)

Federai Ministry of Economics and Labour - Bundesministerium für Wirtschaft und Arbeit (BMWA)
Referat LP4 – Kommunikation, Internet
11019 Berlin
Federal Ministry of Education and Research - Bundesministerium für Bildung und Forschung (BMBF)
Publishing sector - Referat LS 15 – Publikationen, Internetredaktion
10115 Berlin

December 2003

Main contents

SUMMARY
"In coming years Germany must further consolidate its already good position in ICT diffusion and use.
[...]
With the programme 'Innovation and Jobs in the Information Society of the 21st Century' in 1999 the Federal Government for the first time presented an overall plan for a Germany's way to the information society. The new master plan carries on the political approaches of the co-operation with all important economic and social actors, and put new, ambitious tasks.
[...]
***For the coming years the Federal Government**, along with most experts of companies and associations, **identifies the essential challenges in the action areas**:*
- *Digital economy for growth and competitiveness*
- ***Education, research and equal opportunities***
- *EGovernment, security and trust in the Internet*
- *EHealth."* (p. 6)

Education, research and equal opportunities
"Education is the basis for innovation capacity and competitiveness of the economy. From 2001 every school in Germany is online. The aim of the program 'New media in education" was to bring Germany in an international leading position with regard to the education softwares.
[...]
Education means also equal opportunities."
Disadvantaged, young and unemployed people *"through Internet competencies can increase their individual chances in the society and on the labour market."*
[...]
"In order to improve equal opportunities for men and women, the Federal Government pursues in short time an equal and equivalent Internet participation." (p. 7)

SECTION A: Current situation and perspectives of German information society

SECTION B: Action areas of the electronic information and communication policy
Access to information
"The Federal Government will accompany the change of the models in scientific information with a new development policy." (p. 45)
"In order to achieve the strategic aims, the new development policy, presented in the strategic position paper ***'Join information - Activate knowledge'****, will follow innovative paths in 3 key issues of action:*
- *Science and education policy*
- *Research policy*
- *Information infrastructure."* (p. 46)

Information literacy
The role of information literacy is stressed and it is highlighted that information products and new technologies demand **qualified users with new competencies**, which include:
- The ability to access the needed information sources,
- The ability to critically evaluate information, in order to assess its quality and relevance,
- The ability to focus on relevant and filter out irrelevant information.

These new competencies are an ***"indispensable requirement for an effective use of information."***
"The Federal Government promotes the integration of transmission of information literacy - as a constant essential part - at all educational levels *(including specialisation, continuing and adult education, vocational training and professional development)."* (p. 46)

SECTION C: Appendix

AG Information Literacy, *Standards for teaching information literacy in higher education*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/AG_Information_Literacy.htm
Original website: *http://www.informationskompetenz.de/protokolle/standards.doc* (in German)

Date: 12 March 2003

Institution:
AG Information Literacy (AG Informationskompetenz) *<http://www.informationskompetenz.de/>*

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Standards for teaching information literacy in higher education

Draft 12 March 2003

This document has been prepared by **AG Information Literacy.**

On the basis of the translation and the publication of **ACRL Standards** "*the discussion about IL standards has been stimulated also in Germany.*
[...] *Here... it isn't a question of students' competencies, but* ***of requirements, which must be addressed to organisations teaching these competencies.***"
In order to enhance "***the professionalisation of the librarian educational offers,*** *the participants of a workshop have drawn* ***common standards,*** *which must be fulfilled in respect of planning, persons and organisations.*
The authors are completely aware that these multiple advantages are mostly still visions of the future, and their realisation will require some efforts.

The training plan:
- ***is based on the principles of the library model,***
- ***is developed and represented by the library management,***
- *is worked out in co-operation with the mechanographic centre, the media centre and the disciplinary fields,*
- ***is known and accepted in higher education,***
- ***is integrated into the educational offer,***
- ***addresses to specific target groups,*** *which are different* ***according to disciplinary areas and the study phase,***
- *can include additional offers for special target groups, for example older students or students from upper secondary education,*
- *includes multiplicators from the disciplinary areas,*
- *considers the real demands and needs of the respective target groups,*
- ***is directed towards clearly defined learning objectives,***
- *reacts flexibly to the changed environmental conditions and needs,*
- ***is subject to a permanent control of its results.***

The teacher:
- *has a wide and up-to-date knowledge in the field of information searching, information supply and information evaluation,*
- *is professionally competent and is accepted as a partner by the scientists,*
- *has solid fundamental knowledge in information techniques,*
- *engages himself/herself to formulate methodical-didactic questions and improves his/her competencies through suitable specialisation and training,*
- *uses at best his/her rhetoric tools before the group,*
- *accurately plans and organises training events considering space and technique conditions,*
- *knows the basics and the needs of the respective target groups,*
- *flexibly attends to questions and requests, considering the objective and the time available for training,*
- *constructively uses critiques of students and colleagues,*

- *searches for feedback and exchange of experiences with colleagues, in order to improve continuously the plan and the training realisation,*
- *has personal qualities, such as stress resistance, improvising talent, the ability to introduce arguments, and enjoys himself/herself working,*
- *represents the library through his/her behaviours and a name badge.*

The training spaces:
- *are at best in the library or regularly available for the library in order to organise training events,*
- *fulfil different demands for*
  - individual and small groups consultancies,
  - multimedia training for groups up to 20 people,
  - presentations and lectures for groups from 20 to 100 people,
- *fulfil normal demands concerning lighting, ergonomic furniture and climatic conditions*
- *have an equipment according to the TFT (Technology for Training) measures: blackboard, flip-chart, overhead projector, PC with beamer and moreover*
  - in the multimedia training space about 10 PCs
  - in the conferences space a microphone set,
- *are multifunctional with regard to furniture placement and tool equipment,*
- *are easy to book, and the booking is transparent (for example, through a data bank on an intranet with the following information: term, duration, title, group size, organisers/teachers, space required and if necessary additional equipments).*

The equipment
- *is regularly evaluated...,*
- *is integrated through a notebook with portable beamer and a moderator suitcase for the events organized outside the library.*

The lesson *is prepared through*
- *timely booking of the space with the necessary further equipment,*
- *time planning with enough space to use in the occupied rooms,*
- *information to the assistants responsible for preparing the space and putting it into order,*
- *information to the EDP - Electronic Data Processing Section, in order to have someone available if necessary,*
- *communication to other offices...*

The marketing
- ***follows a differentiated general plan of the library****, where competencies, tools and organisation are fixed,*
- ***through the training addresses to the target groups directly interested in the training but also to event multiplicators,***
- *is also a possibility* ***to position the library*** *in higher education and before the general public* ***as an information centre,***
- ***considers the respective target groups in the choice of media*** *(posters, letters, e-mails, newsletters, flyers, announcements on the library's home page, "word-of-mouth" system, press articles).*

Federal Ministry of Education and Research, *Development of reading literacy*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/reading_literacy.htm*
Original website: *http://www.bmbf.de/pub/bildungsreform_band_siebzehn.pdf* (in German)

Date: 2005

Institution:
Federal Ministry of Education and Research *<http://www.bmbf.de/en/index.php>*

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Renate Valtin, Humboldt-Universität zu Berlin
Klaus Ring, Stiftung Lesen, Mainz

Federal Ministry of Education and Research, *Expertise - Development of reading literacy*

Education reform – Vol. 17

Publisher (Herausgeber)
Federal Ministry of Education and Research - Bundesministerium für Bildung und Forschung (BMBF)
Publishing Section - Referat Publikationen;Internetredaktion
11055 Berlin

Bonn, Berlin 2005

Main contents

INTRODUCTION
"*... **Recommendations for contents, processes and co-operation... inside and outside the Lands***" are "***important potentials to promote durably and effectively reading literacy of German students.***
[...] *With regard to the development of reading literacy it was pursued the aim to combine the points of view of different disciplines in creating* ***expert groups****. Not only psychologists, pedagogists participated to these groups, but also didactic experts of German language and literature, language researchers.*" (p. 5)

SECTION I – Why to develop reading literacy?

SECTION II – Reading literacy: development models and starting points for promoting it

SECTION III – Development of reading literacy inside and outside the school

SECTION IV – Overview of projects and approaches for the development of reading literacy in the Lands
"*In the Lands of the Federal Republic of Germany many initiatives and projects have been undertaken in order to develop reading literacy considering students' rather weak performances.*" (p. 81)
Networks, partnerships and professional associations
[...] "*Different partnerships have been promoted.*"... "*in Nordrhein-Westfalen within the project '****Media partners library and school: reading and information literacy in NRW****' the library and many schools in the municipalities involved in the project come to*

agreements in order to regularly collaborate. Here the agreed methods have been utilised. Contact persons of the participant bodies form a local working group, that plans and develops the collaboration. All school forms participate, so that it's possible to develop a system of initiatives one founded on the other, in order to promote reading and information literacy during the entire school time. Within the project several supporting specialisations and vocational trainings have been carried out both for teachers and librarians. At the same time it is wanted to publish tested plans in the project's progress in order to permit their further use." (p. 97)

SECTION V – Content deductions and recommendations

BIBLIOGRAPHY

Compulsory schooling obligation: the new key competences

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/16years_obligation.htm
Original website:
http://www.pubblica.istruzione.it/news/2007/obbligo_istruzione.shtml (in Italian)

Date: September 2007

Institution:
Ministry of Public Education <*http://www.pubblica.istruzione.it/*>

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Compulsory schooling obligation until the age of 16 years: the new key competences

Synthesis of the Italian Minister of Public Education's speech

Rome, 6 September 2007

"Through the new schooling obligation, Italy points to Europe by adopting and implementing the key competences for lifelong learning recommended by the EU on 18 December 2006
[...]
The eight key competences for active citizenship which all the students must acquire by 16 years of age are needed for personal fulfilment, the building and the full development of all individuals, of fair and relevant relations with others, of a positive interaction with natural and social reality. The poor attention given to these competences is one of the main causes of the disorientation and uneasiness of young people.

That's what everyone must acquire and know today in order to go forward into adult life tomorrow as leaders.

*The **eight key competences for active citizenship**:*
1. Learning to learn
2. Planning and managing projects
3. Communicating
4. Collaborating and participating
5. Acting autonomously and responsibly
6. Problem solving
7. Identifying links and relations
***8. Acquiring and interpreting information:** every young man/woman must be able to critically acquire and interpret information by evaluating its reliability and usefulness, distinguishing facts and opinions.* (Today many young people are passive addressees of a huge volume of messages because they lack devices for evaluating those messages)

Four cultural axes
"Young people can acquire the key competences for active citizenship through knowledge and skills related to basic competences referring to the following four cultural axes:
- axis of languages
- mathematical axis
- scientific-technological axis
- historical-social axis"

Annexes:
The new schooling obligation: what is changing at school? Italian rules and regulations from 2007 (see p. 95-97)

The new schooling obligation: what is changing at school? Italian rules and regulations from 2007

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/16years_obligation1.htm
Original website:
http://www.pubblica.istruzione.it/news/2007/allegati/obbligo_istruzione07.pdf (in Italian)

Date: September 2007

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National Agency for the Development of School Autonomy

The new schooling obligation: what is changing at school? Italian rules and regulations from 2007

September 2007

Annex 1 - The cultural axes

Axis of languages

"***Competences - Mastery of Italian language***
To produce various text types in order to achieve different communicative goals
Skills/abilities
To search for, acquire, and select general and specific information depending on the production of different types of written texts.
To take notes, to write summaries and reports.
To clearly elaborate information.
To produce correct and coherent texts, suitable for different communicative situations.
Knowledge
Structural elements of a coherent and cohesive written text.
How to use dictionaries.
Ways and techniques to produce different types of written texts: summary, letter, reports, etc.
Writing phases: planning, redaction, review." (p. 15-16)

Scientific and technological axis

"***Skills/abilities***
[...] *to catalogue information, to search for information and communicate on the net.*
Knowledge
[...]
Structure of the Internet.
General structure and functions common to different applications (menu typologies, how to edit, create, save and store documents etc.)" (p. 25)

Historical-social axis

"***Skills/abilities***
[...]
To read - also in multimedia way - the different sources (literary, iconographic, documentary, cartographic), from which obtain information on historical events of different epochs and geographical regions.
Knowledge
[...]
The different source typologies" (p. 27)

Annex 2 - Key competences for active citizenship to be acquired during compulsory education

"*The extension of the schooling obligation to ten years aims at promoting the personal fulfilment in self-building, in building of fair and relevant relations with others, and of a positive interaction with natural and social reality.*

- ***Learning to learn:***
  Organising one's own learning activity, by identifying, choosing and using various sources and various ways of information and education (formal, non-formal and informal) also depending on available time, on one's own strategies and study and work methods.
- ***Planning and managing projects***
- ***Communicating:***
  - Understanding messages of different type (everyday, literary, technical, scientific) and of different complexity, transmitted in different languages (verbal, mathematical, scientific, symbolic, etc.) through different supports (printed, computer, and multimedia)...
  [...]
- ***Collaborating and participating***
- ***Acting autonomously and responsibly***
- ***Problem solving:***
  To tackle tricky situations building and testing assumptions, identifying suitable sources and resources, collecting and evaluating data, suggesting solutions, using contents and methods of the different disciplines depending on the problem type.
- ***Identifying links and relations***
- ***Acquiring and interpreting information:***
  Critically acquiring and interpreting information - received in different contexts and through different communication tools - by evaluating its reliability and usefulness, distinguishing facts and opinions." (p. 30)

Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (2006/962/EC) translated into Italian

New recommendations for the curriculum of the pre-primary and first cycle education

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/primaryrecommendations.htm
Original website:
http://www.pubblica.istruzione.it/news/2007/indicazioni_nazionali.shtml (in Italian)

Date: September 2007

Institution:
Ministry of Public Education <*http://www.pubblica.istruzione.it/*>

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Ministry of Public Education

New recommendations for the curriculum of the pre-primary (early childhood) and first cycle education

Rome, 4 September 2007

"*'Schools shall educate students by training and pupils as persons shall be central for their mission: only that way the risk that the institutes might become 'project factories' - where the specificity of each child is disregarded - decreases. The curriculum becomes plainer and clearer and Italian language, mathematics, history and geography are privileged compared to English language, informatics and entrepreneurship. Before passing on to other matters, in fact, it is fundamental to know the essential basics.' With these words Giuseppe Fioroni, the Italian Minister of Public Education, commented on the new* Recommendations for the curriculum for the pre-primary and first cycle education *today presented at the Ministry.*

What they are
The new ***Recommendations for the curriculum of the pre-primary and first cycle education*** *outline comprehensive methods, strategies and criteria for achieving the educational goals and the learning objectives of the pre-primary and first cycle education, in place of the previous Recommendations temporarily proposed to the schools last years.*
[...]
Two years of experimentation
The first phase of their practical implementation will last until 2009." The Recommendations could be changed and integrated.
"***Three disciplinary macro-areas***
The single disciplines... are proposed within three disciplinary macro-areas: linguistic-artistic-expressive area; historical-geographical area; mathematical-scientific-technological area.
Therefore, the importance of a no split disciplinary teaching, but good for making the interconnections clear [...] *is underlined.*

Annexes

Recommendations for the curriculum of the pre-primary and first cycle education (see p. 100-103)

Recommendations for the curriculum of the pre-primary and first cycle education

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/primaryrecommendations1.htm
Original website:
http://www.pubblica.istruzione.it/normativa/2007/allegati/dir_310707.pdf (in Italian)

Date: September 2007

Institution:
Ministry of Public Education <*http://www.pubblica.istruzione.it/*>

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Recommendations for the curriculum of the pre-primary (early childhood) and first cycle education

Main contents

Culture, education, person

School in the new scenario

"[...] *Each individual must consider, in his/her daily experience, more and more numerous and heterogeneous information and faces the plurality of cultures.*" (p. 15)

"[...] *In this scenario, school is responsible for specific goals: ... to make sure that students acquire tools of critical thinking needed for learning and selecting information;...*" (p. 16)

The curriculum organisation

Pre-primary (early childhood) education

First cycle education

Linguistic-artistic-expressive disciplinary area

- ITALIAN LANGUAGE

"[...] *The pupil will learn writing by reading and producing a wide range of different texts (functional and creative) following teachers' lead at earlier stages and then autonomously.*

[...] *Pupils should...* ***develop the ability of ordering, grouping together and expliciting all information necessary for achieving the goal.***" (p. 50)

The final goals of the development of competences at the end of the primary education

"*The pupil... understands texts of different kinds, in order to achieve functional goals, for study, entertainment, and/or fun purpose, identifies their overall meaning and/or main information, uses reading strategies functional to achieve his/her goals.*

He/She gradually develops abilities functional to study, extracting from written texts information on a given topic, useful for oral presentations and memorising, acquiring a first core of specific terminology, collecting personal and/or collective impressions, noting his/her own or somebody else's opinions." (p. 52)

[...]

"***Learning goals at the end of the third class in the primary education***

Listening and speaking

[...]

- To understand the subject and the main information of in-class speeches.

[...]

Learning goals at the end of the fifth class in the primary education

Listening and speaking

[...]

- To understand the essential information of a presentation, of instructions to perform tasks, of messages transmitted by the media (announcements, bulletins...)" (p. 53)

"*Reading*

[...]

- To exploit information from titles, images and captions in order to get an idea of the text which is to be read.

- To read and compare information from different texts in order to get an idea of a topic, to take cues which starting from to speak or write.
- To search for information in texts of different type and origin, in order to achieve practical and/or cognitive goals applying simple techniques for supporting comprehension (e.g. underlining, noting down information, building maps and schemes etc.)." (p. 54)

The final goals of the development of competences at the end of the first-grade secondary school

"*The student... in study activities - both individual and collaborative - uses the manuals of disciplines or other study books, in order to search for, collect, process and elaborate necessary data, information and experiences, also by utilising ICT tools.*" (p. 55)

"***Learning goals at the end of the third class in the first-grade secondary school***

Listening and speaking

[...]

- To express orally personal experiences selecting significant information depending on the purpose, ordering it according to a logical-chronological criterion, expliciting it clearly and exhaustively and using a register suitable for the subject matter and situation.
- To report orally on a study topic making the purpose explicit and clearly presenting the subject matter: to present information in a predetermined and consistent order, to use a register suitable for the subject matter and situation, to control the specific vocabulary, specifying sources and eventually using support materials (maps, tables, charts).

Reading

[...]

- To extract explicit and implicit information from informative and expository texts in order to read up on a specific topic and/or to achieve practical goals.
- To compare, on the same topic, information drawn from many sources, selecting those most relevant.
- To reformulate synthetically information selected from a text and reorganise it in a personal way (topic lists, schematic summaries, maps, tables).
- To use functionally the various parts of a study manual: indices, table of contents, chapters, headlines and captions, synopses, boxes, images, graphic apparatuses." (p. 56)

- **EU LANGUAGES**

The final goals of the development of competences at the end of the first-grade secondary school for the first and the second foreign language

"*The student... acquires and interprets information evaluating its reliability and usefulness.*" (p. 61)

Historical-geographical disciplinary area

- **HISTORY**

"***Learning goals at the end of the fifth class in the primary education***

How to use documents

- To extract information from different types of documents useful to understand a historical phenomenon.

[...]

How to organise information

[...]

How to produce information

[...]

- To extract and produce information from charts, tables, historical maps, iconographic finds, and to consult texts of different genre, both manual and not." (p. 84)

*"**Learning goals at the end of the third class in the first-grade secondary school***
How to use documents
- To use different kinds of sources (documentary, iconographic, narrative, material, oral, etc.)
[...]
How to organise information
- To formulate problems depending on the gathered information
[...]
Conceptual tools and knowledge
- To select, file and organise information through maps, schemes, tables and charts.
[...]
- To use acquired knowledge in order to understand ecological, intercultural problems and those related to social harmony and integration
How to produce information
- To produce texts, using knowledge selected and filed from different information sources..." (p. 85)

- **Geography**
  The final goals of the development of competences at the end of the primary education
  "The pupil... extracts geographical information from many different sources (cartographical and satellite, photographic, artistic-literary)." (p. 87)

Mathematical-scientific-technological disciplinary area
"[...] *the student... learns to collect data and to compare them with the formulated assumptions, negotiates and builds interindividual meanings, is pushed to temporary conclusions and new openness in his/her building of individual and collective knowledge."* (p. 91)

- **MATHEMATICS**
  The final goals of the development of competences at the end of the primary education
  " *The pupil... uses suitable data representations and is able to utilize them in significant situations in order to extract information."* (p. 94)
- **TECHNOLOGY**
  "[...] *the gradual competence in using specific ICT tools will enable students to develop their own ideas and present them accurately..., to find, interpret, exchange and share information, to organise, process and elaborate, retrieve, file and reutilize it. The development of critical and evaluation skills - goal of general validity - will be especially pivotal also with respect to information more and more available in the net, which requires to be put in suitable reference and organisation frameworks, in order to be used in a significant and relevant way."* (p. 108)
  The final goals of the development of competences at the end of the first-grade secondary school
  "The student... searches for information and is able to select and synthesise it, develops his/her own ideas using ICTs, and is able to share them with others." (p. 110)
  *"**Learning goals at the end of the third class in the first-grade secondary school***
  [...]
  - To know how to use the net for searching for and exchanging information" (p. 111)

Ministry of Education and Science, *Development of education.* National report of Latvia

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/nationalreport.htm*
Original website: *http://web2.izm.gov.lv/dokumenti/izglitibas_politika/zinojums_2004_en.doc*

Date: 15 August 2004

Institution:
Ministry of Education and Science *<http://web2.izm.gov.lv/frontpage.aspx?lang=5>*

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Ministry of Education and Science of the Republic of Latvia

Development of Education
National report of Latvia

15 August 2004

INTRODUCTION

"The National Report of Latvia on the development of the education system at the beginning of the 21st century consists of two main parts. The first part of the Report provides a general insight into the Latvian education system. It presents information on the Latvian education system and its administration.

[...]

The second part of the Report looks at the Latvian education system development from different aspects over the past two years in different stages of education. This part names several regulatory enactments developed by other public administration institutions. These documents are binding also for the Ministry of Education and Science in order to create a unified national policy and development strategy." (p. 3)

2. ASPECTS FOR THE PROVISION OF QUALITY EDUCATION AND ACCESSIBILITY OF EDUCATION

2.3 Aspect of the provision of life skills and education

[...]

*"**The general Education Curricular Reform Plan, approved in 2001, provides**:*

- *orientation to the implementation of coordinated curricula and integration of subjects within the frameworks of fields of education (languages, the individual and society, technologies and basic principles of sciences);*
- ***transition from the acquisition of quality and formal information to skills to operate with information in many different ways;***
- *introduction of modern teaching methods and information technologies, and their use in the learning process."* (p. 19-20)

Ministry of Education and Science, National report. *Education and training 2010*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/Educationandtraining2010.htm
Original website: *http://web2.izm.gov.lv/dokumenti/izglitibas_politika/national_report2005.doc*

Date: 2005

Institution:
Ministry of Education and Science <http://web2.izm.gov.lv/frontpage.aspx?lang=5>

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National report
Education and training 2010

National report on the progress of implementation of the European Commission's programme *Education and Training 2010* in Latvia

Riga, 2005

3. IMPLEMENTATION OF A COORDINATED AND COMPREHENSIVE LIFELONG LEARNING STRATEGY

Priority reforms for the implementation of lifelong learning in the country
Preparation and implementation of the curricular reform
"*Over the past ten years significant changes regarding curricula have taken place in the education system of Latvia. The most important changes during the process of basic education curricular reform are connected with the following aspects: incorporation of modern themes in the curriculum; emphasis on conclusions and skills useful for practical life; incorporation of themes adequate to pupils' age and development in the curriculum; integration of the curriculum and its harmonization with subjects by preventing its overloading or duplication of individual themes;* ***transition from the acquisition of high volumes of information to skills operate with information***." (p. 13)

Curriculum Development and Examination Centre, *Latvian language. Standard for compulsory education, grades 1-9*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/Latvianlanguage_standard.htm
Original website: *http://isec.gov.lv/en/en_latval.htm*

Date: 24 February 2004

Institution:
Ministry of Education and Science <*http://web2.izm.gov.lv/frontpage.aspx?lang=5*>. The Centre for Curriculum Development and Examinations (ISEC) <*http://isec.gov.lv/en/index.shtml*>

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APPROVED
by **the Curriculum Development and Examination Centre**
Statement No. **29, 24th February 2004**

Latvian language
Standard for compulsory education, grades 1-9

INTRODUCTION

"The Standard for compulsory education in Latvian Language sets the aim, objectives, compulsory content of the subject area, main attainment requirements and forms and methodological techniques for assessing learning. The Standard has been devised in compliance with the requirements of the National Standard of Compulsory Education." (p. 1)

SUBJECT AREA REQUIREMENTS

Communicative competence

- **Language skills**
  - ***Listening***
  - ***Speaking***
  - ***Reading***

    "17. Grade 3 - Finds concrete information in a text and uses it in his/her activities.
    Grade 6 - Evaluates the information given in the text (new/familiar/important/insignificant), uses it in his/her activities.
    Grade 9 - Evaluates the information given in the text critically, uses it in his/her activities".
  - ***Writing***

    "21. Grade 3 - Writes down information required for every day life or learning.
    Grade 6 - Writes down and systematises information using different techniques/approaches.
    Grade 9 - Purposefully applies different techniques for information systematisation and exchange." (p. 3)

Socio-cultural competence

"45. Grade 3 - Identifies the information on a nation's history and culture in a text.
Grade 6 - Identifies cultural information in a text.
Grade 9 - Identifies the views of different nations about values in a text." (p. 5)

Learning competence

"Grade 3 - Applies the acquired learning strategies (in listening, reading and speaking).
Grade 6 - Applies the acquired learning strategies appropriate to the target and purpose.
Grade 9 - Selects and applies different learning ways and strategies appropriate to the learning task.
Grade 3 - Understands the wording of tasks and acts according to the given conditions.
Grade 6 - Chooses effective and appropriate techniques for performing a language task.
Grade 9 - Uses language system summary/overview tables and different sources of information for performing a language task.
Grade 3 - Uses visual information and different sources of information for language acquisition.
Grade 6 - Acquires, evaluates, gives information in his/her Mother tongue, second language and foreign languages.
Grade 9 - Purposefully acquires, understands and exchanges information in the acquired languages." (p. 7)

Curriculum Development and Examination Centre, *Literature. Standard for compulsory education, grades 4-9*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/Literature_standard.htm*
Original website: *http://isec.gov.lv/en/en_literatura.htm*

Date: 12 January 2004

Institution:
Ministry of Education and Science <*http://web2.izm.gov.lv/frontpage.aspx?lang=5*>.
The Centre for Curriculum Development and Examinations (ISEC)
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APPROVED
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Statement No. 29, **12th January 2004**

Literature
Standard for compulsory education, grades 4-9

"The Standard for compulsory education in Literature sets the aim, objectives, compulsory content and main attainment requirements for the acquisition of the subject area at the end of grades 6 and 9, as well as the assessment forms and methodological techniques. The requirements included therein are coordinated with those set by the National Standard of Compulsory Education for the educational sphere 'Arts'." (p. 1)

SUBJECT AREA COMPULSORY CONTENT

Literature as a part of culture.

"Literature as a special way to learn about national cultural traditions.
The reader's interest in the folklore and literature of his/her nation and other nations.
***Diversity of information sources for learning about cultural traditions.**"* (p. 2)

SUBJECT AREA MAIN REQUIREMENTS

Comprehension of a literary work, creative activity

"20. Grade 6 - Relates the content of a literary work, revealing the given information about the place and time of action, characters and events.
21. Grade 6 - Writes a resume and comment on a literary work.
Grade 9 - Writes a review on a literary work.
22. Grade 9 - Writes an essay presenting arguments on a literary and open topic.
23. Grade 6 - Writes descriptively and informatively on literary and open topics.
Grade 9 - Writes a discursive essay on a literary and open topic.
[...]
26. Grade 9 - Makes a report on a literary theme." (p. 3)

Literature as a part of culture

"38. Grade 6 - Recognises conventional information sources and orients him/herself in the school, town (village) library, can find the required information.
Grade 9 - Purposefully chooses and uses different conventional, electronic and audiovisual information sources for finding information." (p. 4)

Parliament of the Republic of Lithuania, *Law on Education*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Law_on_education.htm
Original website: *http://www3.lrs.lt/pls/inter2/dokpaieska.showdoc_l?p_id=281043*

Start Date: 25 June 1991
End Date: 13 June 2006

Institution:
Parliament of the Republic of Lithuania <*http://www3.lrs.lt/pls/inter/w3_eng_h.home*>

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REPUBLIC OF LITHUANIA

LAW ON THE AMENDMENT OF THE LAW ON EDUCATION
25 June 1991 No. I-1489
(As new version by **17 June 2003** No. IX-1630)
(As last amended on **13 June 2006** - No. X-689)

Law on Education of the Republic of Lithuania

CHAPTER ONE

Article 2. Main Concepts in the Law

[...]
"*23. **Self-education** – continuous independent learning, based on information a person obtains from various sources and practical experience.*"
[...]

Article 3. Goals of Education

"*The goals of education are:*
1. *to develop a young person's values enabling him to become an honest, **knowledge-seeking**, independent, responsible and patriotically-minded person; to cultivate the communication skills important in contemporary life; **to assist in internalising the information culture characteristic of the knowledge society**, by providing for mastery of native and foreign languages, **information literacy** as well as social competence and the skills to shape life independently*".

Parliament of the Republic of Lithuania, *The national education strategy 2003-2012*

English outline in EnIL:
http://www.cens.cnr.it/Basili/EnIL/gateway/lithuania/Education_strategy.htm
Original website:
http://www.smm.lt/en/legislation/docs/Lithuanian%20Education%20Strategy%202003-2012.pdf

Date: 4 July 2003

Institution:
Parliament of the Republic of Lithuania <*http://www3.lrs.lt/pls/inter/w3_eng_h.home*>

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Parliament of the Republic of Lithuania
Resolution: ***Provisions of the national education strategy 2003-2012***

The National Education Strategy 2003–2012 - Provisions

APPROVED
by the Parliament of Lithuania
Resolution No. IX-1700, **4 July 2003**
Vilnius

IV Measures of implementation

"13. *To ensure the quality of education development:*

1. *the contents of education shall be updated and related to new competencies of an individual:*
   [...]
   - a more consistent transition to the new contents development policy oriented towards development of general abilities, values, provision of the necessary competencies based not so much on the transfer of knowledge, as on their analysis, critical assessment and practical application; ...
   [...]
   - ... targeted development of the main literacy skills, social, cultural and communication competences, critical thinking, problems solving skills and ability to learn;
   *- **attention to development of information culture shall be strengthened on all levels of education**; pragmatic computer literacy programmes shall be introduced ...*
   [...]
   *- on all levels of education the methods of conveying the contents of education shall be changed essentially; **active learning methods** and **individual project activity** shall be introduced to encourage independence and co-operation;*

2. *new developments in the training and work of teachers:*
   [...]
   *- an integral teacher training and qualification upgrading system shall be developed; it should be oriented **towards the changing role of a teacher in knowledge society**, and the new competences and values that are necessary for a contemporary teacher. Knowledge society will change the role of a teacher: the holder of knowledge will be replaced by **the organiser of the learning process, creator of learning opportunities, learning adviser, partner, mediator between the learner and different modern sources of information.**"* (p. 12-14)

Ministry of Education and Science, *Country report*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Country_report.htm
Original website:
http://www.smm.lt/en/stofedu/docs/edu_reform/Report%20Lithuania%20040504.doc

Date: 2003-2004

Institution:
Ministry of Education and Science <*http://www.smm.lt/en/*>

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The Ministry of Education and Science of the Republic of Lithuania

Country report

Vilnius
2003/2004

PART I: STRATEGY OF TEACHING LITHUANIAN LANGUAGE AT GENERAL EDUCATION SCHOOL (2004–2009)

4. Improvement trends of Lithuanian language teaching at school of general education

4.1 The use and importance of know-how society provided possibilities

"The society in which different area activities are based on the knowledge is called the ***know-how society****. Thus, the same term 'know-how society'* ***covers not only the information but also the information management and information activities in general. Information as such only represents structured data which are absolutely passive unless they are being used by someone knowing how to process and interpret them****. Nowadays the use of information almost does not cost anything, while dissemination of know-how and development of knowledge acquisition capabilities stills remains to be quite a complicated and costly process."* (p. 8)

4.5. Teaching of Lithuanian language during lessons of other subjects

"The general school teaching objectives and goals in general curricula and education standards define necessary directions of classroom activities: to cultivate certain general competences, value-related attitudes and general skills of learner. In pursue of achieving general objectives, the school should create conditions for learners 'to develop their communication skills, which are so important in today's life, and cultivate ***information culture*** *(knowledge of native and foreign languages and computer literacy)'. There shall be highlighted formation of value-related attitudes and development of general skills (personal, social, communication, work and activity).*

[...]

It is very important that learners should be familiarized with IT and the use of the Lithuanian language. This pertains to the Internet language, its possibilities, the Internet and electronic dictionaries, electronic databases, digital language resources, automatic translation databases, etc. Computer versions of dictionaries and directories, including collections of various templates, and the ability to use all this should be considered to be the manifestation of both verbal communication and ***information skills****. Development of these skills should be the task for teachers of all disciplines."* (p. 21)

5. General conclusions

"... there should be pointed out the following directions of activity:

1. *In forming the Lithuanian language (both native and official) teaching content, it is necessary to take into consideration the specific public requirements with respect to the level of language command and to match them to the individual capabilities and needs of a person with* ***a special focus on the basic skills required in the information and know-how society.****"* (p. 23)

PART II: EDUCATION OF NATIONAL MINORITIES AND IMMIGRANT CHILDREN

PART III: FOREIGN LANGUAGE EDUCATION STRATEGY PAPER

1. Overview of foreign language education

1.2. Aims of foreign language education

" The skills... include personal, social, communicative, critical thinking and problem solution, etc. skills. Some specific skills are also important in foreign language education and they are presented in general curriculum as the components of communicative competence, i.e. subcompetences.

[...]

One of the main objectives is to teach foreign language in the form of practical activity allowing ***to discover the content and meaning of information, to compare new and old information,*** *to absorb various cultural experiences, to process, store and convey them. Therefore, the idea is to show that* ***language is a tool to receive and transmit information.*** *The practical aims of foreign language education require the entire teaching process to be of communicative nature. Schoolchildren must develop the skills of autonomous learning, be able to apply their skills and knowledge in new situations, be able to use dictionaries, reference books and latest information technologies."*

2. Possibilities of foreign language learning

2.8 Foreign language education for adults. Possibility of lifelong learning of foreign languages

"In modern society, every person must develop the attitude and the ability for lifelong learning, the ability of autonomous learning using the possibilities offered by various forms of education and new information and telecommunication technologies. ***The renewed curriculum*** *must provide a modern individual with social, cultural and communicative competence. It* ***must develop the important metacognitive and communicative skills and information culture (proficiency in native and foreign languages, computer literacy).*** *The programmes for computer and economic literacy, development of entrepreneurship and foreign languages are becoming an important part of continuous adult education."* (p. 63)

3. Organisation of foreign language curriculum through the implementation of Curriculum and Standards for Foreign Language Education

3.1 General principles of communicative skills development

"The course of foreign language education has been changing according to new priorities of didactical principles... Foreign language teachers had to adopt such teaching methods which stimulated the independence of students, perception of communication process, critical thinking, ***ability to acquire and convey the necessary information*** *and develop the system of values. The teacher had to understand the importance of new methods and be able to apply them creatively in the development of language activity together with innovations in modern pedagogical science."* (p. 63)

4. Achievements in foreign language education

4.1. Assessment of foreign language achievements in the context of changes in the educational process

"4.1.2. Despite recent changes in educational goals and content, there were no major changes in student assessment. ***The traditional culture of student achievement assessment*** *does not fit modern goals and objectives of education. Such assessment* ***is very narrow and more***

encouraging to remember information rather than think critically, solve problems or use various sources of information. (p. 66)

4.2 Assessment of achievements in learning and maturity examinations

"The main skills to be tested during the maturity examination at state and school level are the following:
- to understand and analyse spoken and written texts;
- to create text(s) appropriate to the communicative goal and situation;
- to use the main grammatical forms and structures.
During the foreign language examination and spoken language credit, the following general skills of pupils are also tested in an integrated way: ***communicative and information skills*** *(listening, reading, writing,* ***finding the necessary information, understanding, analysing, interpreting and assessing oral and written information, conveying of information in various ways); thinking (intellectual) skills*** *(synthesizing, creating, evaluating and applying knowledge in new unconventional circumstances, using of knowledge in various situations, selection of problem-solution strategy and searching for specific solutions)...*
The content of foreign language examination is defined by the specifications and lexical topics (subtopics) of the examination. The object of assessment is the reception (listening and reading), written interaction and production skills as well as the use of correct language. The main tested reception skills are: understanding of the essential information and the main idea; understanding of major details; detailed text understanding; analysis, selection and division of information; understanding of implications, the author's position and view; use of appropriate text understanding and compensation strategies. The texts of various types, styles and genres according to the topics in the syllabus and the specifications of educational standards are selected to test spoken and written text understanding skills.
The examination tests the written interaction and production skills to create various types of texts (descriptive, narrative, informative, cogitative) according to the requirements of specified genres in a particular communicative situation by selecting a relevant form of text, presenting the content (ideas) in a logical and coherent manner, and choosing appropriate means of expression." (p. 72)

5. Foreign language teachers

5.1. Training of foreign language teachers

5.1.2. Training of educators at universities and colleges

"Rapid changes in social and cultural life, the development of information society and the integration into the Euroatlantic structures raise new objectives for education in Lithuania. A new environment for education is developing and the culture of education is changing... The role of teachers is changing. The teacher should not only be the holder of knowledge but also the organiser of learning, moderator, helper, advisor, partner, intermediary between a student and different modern sources of information. The teacher of today has to be competent in both professional education and non-formal, additional education. ***Teachers of foreign languages must have good communicative skills, information skills*** *and good social competence."* (p. 80)

6. Key developments, priorities and problems for the implementation of foreign language strategy

6.3. Problems and solutions of foreign language teaching

"General Curriculum Framework and Educational Standards for grades 11–12 summarise the aims and objectives of education, the competences which are important and necessary for

any member of knowledge society and his/her professional activity.
[...]
Proficiency in foreign languages is and will be very important for everyone in the future. ***A member of information society must be armed with the latest information and communicative skills. A special focus must be put*** *on the development of general foreign language skills as* ***the ability to learn and use information independently,*** *etc. A student must be able to communicate in writing and orally as well as to perceive foreign language as the means of communication and expression of ideas, use different strategies and develop the autonomous language learning and self-control skills."* (p. 92)

Ministry of Education and Science, *Strategy for the implementation of information and communication technologies in vocational training*

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Strategy for the implementation of information and communication technologies in vocational training

approved by the Minister of Education and Science of the Republic of Lithuania

Order No. 1722 of 4 November 2004

1. INTRODUCTION

[...]

"Vocational training is considered to be one of the key factors in Europe, which is becoming the most dynamic knowledge-based economy in the world;

[...]

One of the priority directions of the development of the modern society is the rapid implementation of ICT in all fields of activities. This is also reflected in the Information Society Development Programmes of the EU and the Republic of Lithuania. [...] *a purposeful and active strategy for the intensive implementation of ICT in the field of vocational training must be a central part of both the Lithuanian educational system and the adaptation of the whole economy to the needs of the information society."* (p. 3)

1.1 Aims of the Strategy

"The aim of implementation of Information and Communication Technology in vocational training is to foresee the perspectives and aims of ICT integration into the Lithuanian vocational training system, the phases and methods of its implementation, responsible institutions and their role in this process and potential funding sources.

The present document is a part of the country's common educational strategy. It is intended for politicians, the country's educational officials, employees of counties, municipalities and other education management institutions, universities and colleges, scientific institutes, funds, school communities and other institutions and persons involved in the implementation of Information Technology." (p. 4)

3. VISION

3.1. Main Fields, Objectives and Tasks of ICT Implementation in Vocational Training

"The Strategy for ICT Implementation in Vocational Training is part of ICT implementation in the whole educational system of Lithuania, and it is formed with regard to the needs and aims of the development of the information knowledge society both in Lithuania and Europe

[...]

The provisions of the National Strategy for Education 2003–2012 provides for the mission of vocational training – to help a person acquire professional qualifications conforming to the state-of-the-art level of technologies, culture and personal capacities, and to create conditions for lifelong learning – to constantly meet the needs for knowledge, to seek new competences and qualifications necessary for one's professional career and making one's life meaningful." (p. 8)

3.4 Training programmes

3.4.1 Levels of ICT training programmes

[...]

"The knowledge of the first initial level must be mandatory to students of all vocational training programmes.

[...]

*... **the student must be able** to manage his/her personal information in the computer memory, to prepare descriptions of individual tasks with unsophisticated graphic elements and sets of slides, to manage electronic mail, **to use the training material presented in the Internet or intranet and to make a search for necessary information in the Internet.**"* (p. 11)

3.5 Teaching and learning methods

3.5.1 Methods for the improvement of ICT skills

Among the methods recommended for implementation of ICT skills in the vocational training system there is:

"***Internet information sources are used and developed***" (p. 12)

3.5.2 Implementation of distance learning technology

"*ICT implemented in schools are not only the subjects of extra training and tools of background information search and communication but they also create conditions for a more advanced distance learning technology based on technical means. Along with implementation of this technology, the significance of independent learning is increased, and conditions are created for the improvement of training quality, consolidation of resources of several training institutions and for taking advantage of Internet resources. This is a global tendency related to the needs of the new information society and rapidly changing technologies, which sets new requirements for qualifications of teachers and organisation of the training process itself.*

[...]

Objective:

***To integrate training in information culture into the overall training process of vocational training institutions** and to reorganise it by implementing innovative training and learning forms and methods on the basis of ICT."* (p. 12-13)

3.6 Supply of computers, software and computer training aids

[...]

"*The experience of different countries shows that the optimal number of computers in computer classes is 15–20. There must be a sufficient number of computers so that at least 30 hours would be devoted to every student for practical computer literacy skills. **The same amount of time should be devoted for the independent search for information on the Internet every semester**.*" (p. 14)

3.7 Establishment of libraries - Information centres

[...]

"*Upon the reorganisation of school libraries into information centres, the functions and role of their employees in the school must be fundamentally changed: **the librarian of the school must be an information specialist and teacher capable of improving information capacities.** The competence of specialists of modern school information centres in the application of the state-of-the-art ICT is particularly important.*

Objectives:

1. *When computerising school libraries and reorganising them into libraries – information centres, to automate the work of libraries, to unify search and access to electronic information sources and virtual services. **Libraries – information centres must become centres for fostering students' information culture.***
2. ***Vocational training institutions that would become centres of information culture for students** and educational centres for local communities.*

Tasks:

a) *When computerising libraries of vocational training institutions, to establish computerised information search, learning and work places, and to supply them with necessary software.*

b) *When automating the work of libraries, to implement information systems of school libraries (MOBIS or similar).*
c) *To implement information search systems in electronic catalogues of libraries and databases of Lithuanian and global documents, and to create conditions to use information resources contained in them.*
d) *To supply libraries with sufficient resources of information sources in electronic media.*
e) ***To organise for librarians refresher and training courses on the use of ICT in their work as well as programmes intended for the acquisition of qualifications of a pedagogue improving information capacities.***
f) *To include libraries of vocational training institutions into the Network of Lithuanian Academic Libraries (NLAL) being developed.*" (p. 15-16)

4. STAGES AND PRINCIPLES OF IMPLEMENTATION OF THE ICT STRATEGY

1.1 Stages of Implementation of the ICT Strategy

Stage I

"*During this stage, it is sought to launch the modernisation of libraries by transforming them into information centres. The main tasks are to provide libraries with computers, office equipment and different electronic information resources, to involve scientific and study institutions in the development of computer-based training aids and electronic information sources and* ***to create conditions for all school librarians to acquire necessary technological and information qualifications.***" (p. 19)

Ministry of Education and Science, *Strategy for the introduction of information and communication technologies into the Lithuanian education for 2005-2007*

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Strategy for the introduction of information and communication technologies into the Lithuanian education for 2005-2007

Approved by the Minister of Education and Science of the Republic of Lithuania Order No. 2015 of 14 December 2004

I. GENERAL PROVISIONS

"1. *The Strategy for the Introduction of Information and Communication Technologies into the Lithuanian Education for 2005–2007 (hereinafter referred to as the Strategy) sets out the analysis of introduction of Information and Communication Technologies (hereinafter – ICT) into the Lithuanian education system, the mission of the Strategy, the goals, the tasks and the indicators for assessment of the progress.*

2. The object of the Strategy is integration of ICT into all levels of teaching and learning processes in order to improve general education and vocational training in the Lithuanian education system." (p. 1)

[...]

"*7. General principles for introducing ICT in education*

7.1. [...] *a clear link must be established between the Lithuanian and the European strategic documents concerning the information society and knowledge economy development.*

7.2. ***The principle of equal opportunities – high quality informational and technological literacy and the opportunity to use modern tools must be available to all students****, irrespective of their social and economic status, the school which they attend, their gender or their nationality. Special care must be given to the rights of socially neglected children and rural students."* (p. 2)

II. ANALYSIS OF ICT INTRODUCTION IN LITHUANIAN EDUCATION

[...]

"*10. In recent years, the impact of ICT on teaching and learning methods has been continuously growing and is now impacting not only the content of teaching but also the entire teaching process. Experts on education frequently identify the current state of education as a transition from teaching characteristic of the industrial society, which is based on direct knowledge transfer methods, to teaching and learning which are more appropriate to the information and knowledge society and which are based on purposeful formation of skills and competences as well as constructivist knowledge acquisition methods."* (p. 3)

III. THE MISSION AND THE GOALS OF THE STRATEGY

[...]

"*16. Systemic development of educational networks and ICT infrastructure is one of the main preconditions for the evolution of the upbringing processes. Virtual learning environments are being introduced at schools together with development of the Internet content, provision of public electronic services, organisation of training for teachers, school principals and librarians, and the undertaking of monitoring the entire process. The Internet and communication technologies must provide manifold assistance in management and self-governance of the schools. This ought to facilitate implementation of the new learning paradigm, the ideas of learning through communication and constructivism.*

[...]

20. The Strategy stipulates the view that utilisation of ICT in education should not turn into its own end goal. ICT ought to be applied in the upbringing process in order to attain qualitative changes in teaching and learning and substantial improvements in the work effectiveness of schools, teachers and students, as well as to make the learning process more attractive to learners, so that each citizen of the country obtains more opportunities for exploring their creative capacities and for satisfaction of independent activity needs.
21. The Breakthrough in Teaching and Student Learning (hereinafter referred to as the Breakthrough):
[...]
21.4. Student skills relating to work with information, group work, project work and public life in cyber space shall be fostered.
21.5. Qualification of teachers in the ICT area shall be upgraded. Technological literacy shall be related to educational competence, modern teaching and learning methods shall be applied and electronic means shall be used. ***Information culture and lifelong learning by teachers as well as their capacities to get involved in the life of the information society and to undertake activities in cyber space shall be fostered and encouraged.***"
(p. 5-6)

Ministry of Education and Science, *General programme for principal education on information technologies*

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General programme for principal education on information technologies

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Vilnius

General provision

[...]

"*5.* [...] *Internet and mobile communications usage becomes an everyday thing. It is important to create conditions for the pupils to satisfy their modern learning and self-education needs. It is necessary to seek that children could find material suitable for versatile learning, that teachers would explain, advise what to use and how, would relate the academic knowledge with the interests of pupils and the social needs.*" (p. 5)

Competences and values to be developed

"*8.* [...] *ICT suggest especially extensive opportunities for development of the everyday activities of schoolchildren thus promoting continuous personality development: to more skilfully use the advantages of writing, word, and image as tools for communication and co-operation* ***in order to develop independence, for continuous search of knowledge and processing of information, for planning of everyday activities, forming logic and systematic thinking.***" (p. 5)

Objective of the programme

"*9. The fundamental objective of teaching on information technologies is to create conditions for the pupils to acquire skills, knowledge and experience in usage of modern technologies and to relate this to improvement of the learning process of pupils and their integration into life in the knowledge society.*

10. [...] ***Computer literacy and informational culture must be developed in each pupil, particularly stressing abilities, skills, knowledge and experience related to the informational activities;***

10.1. ***Knowledge of features and ways of processing different kinds of information, capability to choose effective tools for processing information of the respective kind,*** *awareness of the significance of development and application of information technologies;*

10.2. Proper, correct and lawful usage of the right technical tools and methods of information technologies;

10.3. ***Improvement of character and style of personal informational activities, increasing of effectiveness, ability to apply new technical tools and methods;***

10.4. Effective application of information technologies while independently learning different disciplines: ***searching information related to these subjects, processing, applying and spreading this information;***

10.5. Ability to think consequently, structurally and algorithmically, to creatively improvise, to plan different actions related to the processing and application of information, ability to take reasonable decisions;

10.6. Knowledge of different computer technologies, terms of information technologies, ability to clearly and reasonably formulate ideas orally and in writing on the issues of application of computer and information technologies, their advantages, problems and influence on the society;

10.7. Endeavour to continuously learn and improve the character and style of one's informational activities.

11. Pupils are being prepared for their future life as citizens of the information and knowledge society who are capable of using the modern technologies and adapting in the changing society and who are ready to improve their life-long professional skills.

12. In grades V-X of principal education the information technology discipline is obligatory. This course is aimed at the creation of the following opportunities for pupils:
[...]
12.4 To uphold the general culture of informational activities in everyday activities." (p. 5-6)

Tasks of the programme

"*13. When implementing the information technologies development programme the following goals must be achieved:*
Pupils should:
[...]
13.3. Be capable of using the opportunities provided by information technologies while looking for information, processing and presenting the information;
13.4. Be capable of planning their activities, of creatively and purposively improvising, and of trusting their strengths;
13.5. Develop their curiosity related to innovations, be disposed to learn newer and more efficient methods of activities and be interested in new technologies;
13.6. While purposefully using ICT, ***be able to receive, sort, handle, transfer and accept digital, textual and visual information.***" (p. 6-7)

Values to be developed

"*14. Informational education and encouragement to efficiently and properly use ICT forms not only the computer literacy and skills of the modern work of pupils but also, if the content and methods of education and self-education are properly prepared, develops their values. A teacher should help and encourage pupils to flexibly and creatively use the advantages of modern technologies for improvement of their everyday activities. The following fundamental values must be nurtured:*
[...]
14.5 Need to continuously improve the character and style of the personal informational activities;
[...]

15. [...] *Pupils would more rapidly acquire competences necessary for better learning. Information technologies are very effective when developing communicative, cognitive, working and practical abilities and competences.*" (p. 7)

General abilities and competences
[...]
"***18. Working and practical abilities and competences:***
18.1. To be aware of the purpose and the principles of operation of computer technologies;

18.2. To be capable of using the basic computer programmes designated for processing information;
18.3. To use the educative computer tools in order to improve learning of various subjects;
18.4. To develop systematic, structural and critical thinking and to take decisions;
18.5. To be capable of searching information according to the set goals;
18.6. To analyse, critically evaluate, and summarise information and to convey it to others." (p. 8)

Didactic provisions

"*19. One of the essential features of the information technologies subject is orientation towards the application.* [...] *Therefore it is important to show at schools how ICT change teaching and learning and assist in different disciplines. This creates one of the basic attitudes of organisation of informational education – association of ICT with the entire school life and all disciplines. It is important to actively and meaningfully apply modern information technologies in lessons of different disciplines... Integration of information technologies and their inclusion into the courses of different disciplines is in essence the development of the style of informational activities. Thus the goal of association of information technologies with practical activities is implemented: when teaching information technologies, priority is attached to practical informational activities and work with different technologies.*
20. It is important to apply various forms of communication in the class (discussions, considerations, short presentations), to prepare papers, summaries, annotations, ***to use different sources of information*** *(books, video and audio records, compact discs, databases contained in the networks)...*
[...]
24. While using modern technologies, certain legal regulation of human relations related to information is forming. It is necessary to implant into pupils respect for the legal norms regulating information technologies, for example, copyrights (to draw the attention of pupils to the bibliographical digest of resources, etc.), to provide information about the rights of a person to receive data about himself or herself and so on. Whereas the Internet is more and more significant in social life, it is essential to give ***permanent attention to the social and ethical aspect of information usage.***" (p. 8-9)

Description of the programme implementation model

[...]
"*26. The cognitive course prevails in grades I-IV of primary education.* ***The programme of primary schools seeks naturally, without special accentuation, to show the child a variety of forms of information, to create an opportunity to experience and manipulate them. The most common and prevailing forms of expression of information are chosen.***
27. [...] ***Rational usage of books and other sources of information*** *starts as well as familiarisation with the computer.*" (p. 9)

[...]
30. It is proposed to devote a total of 68 hours in V-VI grades for the course on information technologies and 34 hours integrating information technologies with other disciplines. Integration with art (topic "Drawing Using the Computer") and Lithuanian and foreign languages (topic ***"Getting Acquainted with the Internet"****) is suggested.*
[...]
35. ... During the practical trainings the work should be performed using different software: keyboard simulators, systems designated for preparation of texts and graphical material, pupils become familiar with the Internet, e-mail, ***searching on the Web****, fundamental concepts of the computer, etc.*" (p. 10-11)

Educational standards for information technologies

[...]

"*44. The standards are formulated based on the fundamental level for grades VI and VIII, which is* ***the main level of information literacy*** *describing good results on the subject sufficient for further successful learning. This level should be achievable by the majority of pupils. After achieving it pupils must perceive the basic concepts of information technologies as well as terms, be able to use information technologies when performing practical tasks according to the provided instructions, and be able to formulate conclusions and summarise the knowledge they have.*" (p. 12)

ANNEXES (cf. p. 134-137)

Ministry of Education and Science, *General programme for principal education on IT - Annexes*

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General programme for principal education on information technologies
Annexes

ANNEX 1
Among **the basic topics in grades V-VII** there are:
- **Internet and e-mail - Search for information on the Internet**
Among the basic topics in grades VII-VIII:
- **Search on the Web**
Among the basic topics in grades IX-X:
- **The computer and society - Information and knowledge society**

ANNEX 2
Among **the educational standards for grades V-VIII** there are:
IT field: Internet and electronic messages
Basic abilities:
"To know at least one search engine and to use it when searching for information, according to a word or group of words.
To know the main ethical principles of information usage and communication in the computer networks.
Achievements:
Grade VI:
4.3 Uses the Internet to search for information
4.5 Describes the main ethical principles of information usage in the networks and risks of the Internet.
Grade VIII:
4.2. Performs a search for information, if necessary using not only the main but supplementary keywords.
4.3. Applies other options in the search engine.
4.4. Finds, saves and uses different information (textual, graphical, video, audio)." (p. 17)

ANNEX 3
Among **the basic integrable topics** there are:
IT field: Internet and electronic messages
Grades V-VI
Content: Search for information on the Internet
- **Discipline: Lithuanian language**
  Achievements:
  "2.2. Uses a library, finds a publication using a directory or index of subjects.
  2.3. Knowing purposes of listening or reading, selects information on the needed aspect, marks the information in the agreed way, writes the bibliographic data.
  4.5. Expresses his or her opinion in writing and orally on concrete and well-known things, evaluates and presents arguments, based on his or her experience. Follows an elementary structure of the text (thesis, arguments, conclusion).
  5.1. Purposefully listens, asks, answers, expresses his or her opinion, and contradicts.

- **Discipline: Technologies**
  Achievements:
  2.1. Finds, collects, makes a reasoned selection, groups, compares and evaluates information in different sources of information (videotapes, compact discs, various publications, etc.) and uses it." (p. 21-22)

Grades VII-VIII
IT field: Organising the information using the computer

- **Discipline: Lithuanian language**
  Achievements:
  "2.2. Finds necessary information using directories, index of subjects, encyclopaedias, catalogues, dictionaries, electronic directories.
  2.3. Selects the most important things, marks them in an agreed way and writes the quotations and bibliographic data.
- **Discipline: Mathematics**
  Achievements:
  1.1.3. With the teacher's help finds the information in the additional literature, catalogues, and computer.
- **Discipline: Technologies**
  Achievements:
  2.1. Finds, collects, makes a reasoned selection, groups, compares and evaluates information in different sources of information (videotapes, compact discs, various publications, etc.) and uses it." (p. 23)

IT field: Elements of table preparation

- **Discipline: Activities with projects in the field of physics, chemistry and biology**
  Achievements:
  "1.6 States his or her opinion, independently finds the necessary information in different sources, summarises the obtained information and conveys it to others orally, in writing, using a chart or a graph." (p. 26)

IT field: Search on the web

- **Discipline: Civil education**
  Achievements:
  "Practical abilities:
  1. To be able to find the information needed for civil life.
  2. To be able to express a reasoned opinion on the issues of social and political life orally or in writing.
  3. To be able to read, analyse and evaluate information and its interpretations presented in media.
  4. To be able to distinguish a fact from an opinion.
  5. To be able to express and to reason the opinion.
- **Discipline: History**
  Achievements:
  Pupils of grades VII-VIII are taught to grasp the elements of the work of a historian: to collect information from different sources (historical documents, media, artistic creations, local historical monuments, museum expositions, direct observation of the present and so on.)
  Uses historical sources for obtaining information and making conclusions.
- **Discipline: Technologies**
  Achievements:
  2.1. Finds, collects, makes a reasoned selection, groups, compares and evaluates information in different sources of information (videotapes, compact discs, various publications, etc.) and uses it." (p. 29-30)

Grades IX-X
IT field: Web browsers and electronic systems

- **Discipline: Civil education**
  Achievements:
  "Practical abilities:
  1. To be able to find the information needed for civil life.
  2. To be able to express a reasoned opinion on the issues of social and political life orally or in writing.
  3. To be able to read, analyse and evaluate information and its interpretations presented in media.
- **Discipline: History**
  Achievements:
  Based on various historical sources, can provide his or her own interpretations of the events of the past.
  Can use various historical sources and is capable of analysing them.
- **Discipline: Technologies**
  Achievements:
  2.1. Finds, collects, makes a reasoned selection, groups, compares and evaluates information in different sources of information (videotapes, compact discs, various publications, etc.) and uses it." (p. 30-31)

Ministry of Education and Science, *Teachers' computer driving license standard*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Teacherslicense.htm*
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Ministry of Education and Science of the Republic of Lithuania

Teachers' computer driving license standard Professional development module 6

PROJECT
Approved by order of the Minister of Education and Science 2001

Given qualification: Certified computer driving license
Term of study: 2 credits (at least 80 hours)
Basic caliber: Higher education

1. GENERAL DESCRIPTION

"Computer Driving Standard for Teachers (The Standard) establishes the requirements for the teacher pre-service and in-service study syllabuses (The syllabuses) for all levels as well as the organization of the studies.

The Standard is a part of teachers' certification requirements for those teachers who are seeking for a higher certification category. It defines the mandatory professional qualifications for application of ICT by the teachers in the process of teaching and self-help. The Standard is a concurrent part of the Teachers Certification requirements. It is oriented to the sixth level of the professional development.

The Standard is concerted with the Lithuanian Concept of Education, Law on Education of the Republic of Lithuania, Regulation of Teacher training and qualification requirements, the National Strategy on ICT in Education, and the Concept of the Development of the Lithuanian National Information Society.

The Standard rests upon:

1. *European Computer Driving License (ECDL) Program. It conforms to minimal computer literacy requirements for the teacher as a public services provider.*
2. *Concept of application of ICT in education, didactic approach to the teachers professional development, requirements to understand employment of ICT in the process of education, to conceive social and ethical peculiarities and knowledge of how to employ the computer educational software.*

The term 'computer literacy' should be understood in a broader sense** as the knowledge of employment of ICT in education and **as a level of general information culture of the educator.

[...]

To meet the requirements of the Standard the minimum teaching program size should be at least 80 hours (2 study credits) with no less than 50 percent of hands-on learning. One third of the program should be designated for the integrating of ICT into education and other educational topics. Computer literacy (the applied part of the Standard) must be most integrated with the application of ICT in education (pedagogical part of the Standard). When teaching topics on computer literacy the modern didactic principals of integration of the ICT into education must be applied." (p. 4)

2. REQUIREMENTS FOR QUALIFICATION

"The Standard is targeted on minimum requirements for literacy of the educators to enable them to:

1. Organize the education with knowledge and competencies in:

a. Application and development of teaching software;
b. Preparation of textual as well as video materials and demonstration of competencies in using presentation tools on a personal computer;
*c. **Usage of basic services of internet;***
d. Application of computer equipment and software in the process of education;
*e. **Systematic development of the information culture of the students and its own.***

2. Develop its professional competencies and disseminate of experience with the knowledge of:

a. The ways for professional development using ICT;
b. Forms of development and dissemination of ICT at the same time being aware of the importance of such activity" (p. 4-5)

3. TEACHING GOALS

*"**Requirements for qualification**: 3. To demonstrate ability to use the basic internet services.*
***Teaching goals**: 3.1 To demonstrate ability to use information resources from internet (and also intranet and extranet resources).*

***Requirements for qualification**: 4. To know how to apply computer equipment and software in the educational process.*
***Teaching goals**:*
4.1 To understand models for development of information competencies and to demonstrate ability to apply those models.
4.2 To understand pedagogical and psychological characteristics for application of ICT in education.
[...]
4.7 To demonstrate the knowledge of essential ways and characteristics of information management, to demonstrate ability to apply hypertext and multimedia in the classroom.

***Requirements for qualification**: 5. To manage the systematic development of information culture of the students and of its own.*
***Teaching goals**:*
5.1 To understand the importance of educational agencies in development of information society and to demonstrate the knowledge of the national concept of development of the information society.
5.2 To demonstrate the knowledge of requirements of the standards for students in sophistication of computers and information.
5.3 To manage development of positive attitudes on usage of ICT by oneself and by the students in personal and cultural activity.
5.4 To understand social and ethical characteristics of ICT.

***Requirements for qualification**: 6. To know the ways for development of professional competencies in employment of the ICT.*
***Teaching goals**:*
[...]
6.3 To demonstrate ability to manage essentials of the distant learning.
6.4 To demonstrate the knowledge of the major Lithuanian and world web sites.
6.5 To demonstrate the knowledge of techniques for development of didactical materials as

well as of other educational information.
6.6 To demonstrate the knowledge of ways to disseminate educational information in computer networks.

***Requirements for qualification**: 7. To know the main forms for development and dissemination of educational information."* (p. 5-6)

4. FINAL EVALUATION

"to establish the readiness of teachers to apply ICT in educational process and determine the general level of its information culture.

The teachers' computer literacy is certified by two documents, when the person:

a. *Passes the ECDL element tests or develops and maintains its work to sustain ability of use of ICT (the Applied part of the Standard).*
b. *Hears the courses on application of ICT in education (the Educational part of the Standard) and fulfils the practical assignments (prepares the final performance) to sustain the competencies of that part.*

ECDL certificates are given by the authorized testing centers of Lithuania. The teacher in-service training institutions that are authorized by the Ministry of Education and Science certify the competencies in the Applied and Pedagogical parts of the Standard." (p. 6-7)

Ministry of Education and Science, *Teachers' general computer literacy standard*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Teachersstandard.htm*
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Ministry of Education and Science
The Republic of Lithuania

Teachers' general computer literacy standard
The sixth professional education level

Approved by
Order No. 1694 issued by
the Minister of Education and Science
on 21 December 2001

Obtained qualification: Certified computer user in educational institutions
Duration of studies: 2 credits (at least 80 hours)
Basic education: Higher

1. GENERAL

"Teachers' Computer Literacy Standard (hereinafter referred to as Standard) defines professional qualifications compulsory for teachers when implementing information and communication technology (hereinafter referred to as ICT) in the educational process and self-education as well as sets the following requirements for:

- *Teacher training and requalification study programmes (hereinafter referred to as Programmes) of various levels, their preparation and implementation;*
- *Teachers' certification requirements to achieve higher qualification category.*

The Standard is a constituent part of teachers' qualification requirements. It is oriented to the sixth level of professional education.

[...]

The Standard is based on:

1. *The Programme of the European Computer Driving License (European Computer Driving License, hereinafter referred to as ECDL). It complies with the minimum computer literacy requirements set for the teacher as an provider of public services.*
2. *The concept of information and communication technology implementation in education; didactic regulations of teachers' professional development, requirements to know how to implement ICT in the educational process, to understand social and ethical peculiarities of ICT as well as to be able to use teaching software.*

The term 'computer literacy' used in the Standard covers not only computer skills but also an ability to use these skills in searching for, collecting and processing ICT information.

[...]

When implementing the requirements of this Standard, the minimum study programme (in-service training) of not less than 80 hours (2 credits of studies) shall be determined, out of which not less than 50 per cent shall be allocated for individual work and not less than 1/3 of the Programme shall be allocated for the subjects on the educological part of the Standard. When teaching the subjects of computer literacy of the Programme, modern didactic principles of ICT integration into the educational process are used." (p. 2)

2. QUALIFICATION REQUIREMENTS

"The object of the Standard is the professional teacher qualification requirements of the information and communication technology.

1. When organizing the educational process, teachers shall know and be able:

a. To prepare software for teaching;
b. To prepare textual and visual teaching and learning material;
c. ***To use the main Internet services;***
d. To implement ICT in the educational process;
e. ***To be able to systematically educate their and students' information culture.***

2. When improving professional competence and disseminating their experience, teachers shall:

a. Know methods of professional competence improvement by using ICT;
b. ***Know the main forms of educological information development and dissemination on the Internet as well as the importance of these activities."*** (p. 2-3)

3. TEACHING AIMS

*"****Qualification requirements****: 3. To use the main Internet services.*
Aims of studies - technological part*: 3.1 To be able to use the Internet (Intranet and Externet) information resources.*

Qualification requirements*: 4. To be able to use ICT in the educational process.*
Aims of studies - Educological part: *4.1 To know, understand and know how to apply models of information skills' education (solving information problems).*

Qualification requirements*: 5. To be able to systematically educate their own and students' information culture.*
Aims of studies - Educological part:
5.1 To know national conception of information society development.
5.2 To know the importance of educational institutions when developing information society.
5.3 To know the requirements of Lithuanian students' computer and information literacy standard.
5.4 To educate the attitude to use ICT in their own and students' personal and cultural activities.
5.5 To understand social and ethical peculiarities of ICT teaching and to implement them in the pedagogical activities.

Qualification requirements*: 7. To know the main forms of educological information development and dissemination on the Internet as well as the importance of these activities.*
Aims of studies - Educological part:
7.1 To know and be able to implement the main methods of didactic material and other education information development and dissemination methods by using ICT.
7.2 To know the main opportunities of education information dissemination in computer networks." (p. 3-4)

Ministry of Education and Science, *Students' general computer literacy standard*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Studentsstandard.htm*
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Ministry of Education and Science
The Republic of Lithuania

Students' general computer literacy standard

Approved by
Order No. 124 issued by
the Minister of Education and Science of the Republic of Lithuania
on 31 January 2002

I. INTRODUCTION

1. General

"*The term* computer literacy *used in the Students' General Computer Literacy Standard (hereinafter referred to as the Standard) covers a wider aspect: not only skills to work with the computer but also skills to implement information technologies in teaching and learning meanwhile acquiring the most general information skills.*

When preparing the Standard, the following documents were used:

- *The Law on Education of the Republic of Lithuania. No 1-489, 25 June 1991.*
- *The Strategy of Information and Communication Technology Implementation in the Lithuanian Education // Information Technology at School. Conference material. Vilnius: The Ministry of Education and Science of the Republic of Lithuania. The Centre of Educational Information Technologies, 2000, pg. 153–197. Internet address: http://www.ipc.lt.*
- *The Ministry of Education and Sceince of the Republic of Lithuania. General Education Standards. Grades 1-9. Project. Parts I and II. Vilnius: Publishing Centre (Leidybos centras), 1999.*
- *The Ministry of Education and Science of the Republic of Lithuania. Curricula and Educational Standards of the General Education School. Grades 11-12. (Exact and natural sciences, languages, etc.) Project. Vilnius: Publishing Centre (Leidybos centras), 1999.*
- *General syllabi of informatics // LR Ministry of Education and Science. Education Provision Centre. Vilnius, 2000.*
- *Lithuanian Union of Computer Specialists. Institute of Information Technologies. ECDL programme: Version 3.0. Vilnius: Zara, 2001."* (p. 3)

2. Target and purpose of the Standard

"*Information and communication technology consolidates in various areas of life, the needs and problems of information society become more and more evident.* ***Insufficient computer and information literacy is one of the problems to be solved when integrating into the European Union...***

The Standard of Students' General Computer Literacy is required as an original document specifying the objectives of the general education school aiming at general computer and information literacy.

The target group of the Standard consists of educational politicians, officers, planners, developers of the content of education, teachers of informatics and other subjects, students, computer specialists, businessmen as well as society at large. The main purpose of the

Standard is to define computer literacy requirements which are planned to be implemented in the Lithuanian general education school until 2006 and which will be taken into account when preparing curricula, textbooks, training teachers, planning schools' provision with hardware and software, teaching programmes as well as setting up computer networks." (p. 3)

3. Aims of the Standard

- *" To reflect general expectations of students, parents, teachers, professors of vocational and higher schools, politicians, businessmen, scientists when educating the actual citizens of information society.*
- *To define the main computer literacy requirements which shall be acquired by general education school graduates by taking into account the needs of the Lithuanian economy and culture."* (p. 4)

II. GUIDELINES OF STUDENTS' COMPUTER LITERACY ACHIEVEMENTS

4. The structure of achievements guidelines

"The Students' general computer literacy performance guidelines are discussed in the Standard in the following three aspects:

a) ***moral values****, which shall be observed when implementing information and communication technology;*

b) ***general skills****, which are important when using information technology;*

c) ***thematic areas of computer literacy.***

First, the moral values are discussed, which shall be observed in all areas of education when information and communication technology is used.

Then the general skills related to computer literacy are formulated. They are divided into four groups:

1. Learning and working skills.
2. Communication skills.
3. Problem solution and research skills.
4. Critical thinking and evaluation skills.

Finally, student's achievement's guidelines are formulated according to the following thematic areas:

1. The main principles and concepts of work with the computer.
2. ***The fundamentals of handling information with the computer.***
3. Word processing and ***information presentation.***
4. ***The Internet*** *and electronic mail.*
5. Introduction to the spreadsheet program and data base.
6. ***Social, legal and ethical aspects."*** (p. 4)

6. General skills of computer literacy

"Well-rounded computer literacy is impossible without educated general skills. Learning and working, communicating, problem solving and research, critical thinking and evaluation skills are of paramount importance. The Standard stipulates the guidelines of educating these skills.

1. Learning and working skills

- *Students are able to select appropriate means of information and communication technology to carry out teaching tasks.*
- ***Students use information technology to search for, collect, handle and process information from various sources.***
- *Students apply information technologies to implement their creative ideas.*

2. Communication skills

- ***Students are able to use information and communication technology in communication, information dissemination, communication with peers, teachers and other people, public and state organizations.***
- ***Students implement information and communication technology to find and present information from various sources.***

3. Problem solving and research skills

- *Students are able to select strategies of solving problems related to the implementation of information technology.*
- *Students can understand the opportunities provided by information technology implementation when solving problems of real life.*
- *Students use the computer when investigating and simulating not complicated phenomena or processes.*
- ***Students implement information technology when analyzing and interpreting information.***

4. Critical thinking and evaluation skills

- *Students prepare plans of not complicated operations (task solution etc.) and are able to ground them.*
- ***Students evaluate information collected from various sources and define its dependability.***
- *Students are able to critically evaluate and use information technology, computer networks, electronic mail, information systems with great responsibility.*
- ***Students know how to evaluate the eligibility of information technology methods and information sources to carry out concrete tasks.***
- *Students are able to evaluate social computer literacy problems as well as dangers to the culture of the state, people's communication and health of the people working with computers."* (p. 5-6)

Ministry of Education and Science, *Computer literacy standard of school librarians*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Schoolibrstandard.htm
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Ministry of Education and Science
The Republic of Lithuania

Computer literacy standard of school librarians

Approved by
Order No. 1782 issued by
the Minister of Education and Science
on 25 October 2002

1. GENERAL

"Computer Literacy Standard of School Librarians (hereinafter referred to as the Standard) defines the competence required from school librarians and specialists implementing information and communication technology (hereinfater referred to as ICT) to service readers as well as to supplementary educate schoolchildren's information skills.
School librarians shall:

- *know the conception of the national information society development,*
- *know the importance of the school library when developing information society in Lithuania,*
- *understand social and ethical peculiarities of ICT implementation in teaching,*
- *know (and be able to implement) the main opportunities of ICT integration into education, be able to implement ICT in the activities of the school library,*
- *acquire teachers' qualification specified in the computer literacy standard.*

[...]
The Standard is based on:

1. *ICT Implementation in the Lithuanian Educational Strategy, which defines the role of the school librarian as educational specialist.*
2. *The concept of information and communication technology implementation in education; the conception of school library as well as its regulations of the catalyst of the changes at school.*
3. *Teachers' Computer Literacy Standard, which supplements this Standard by requirements compulsory for school librarians.*
4. *The Programme of the European Computer Driving License (European Computer Driving License, hereinafter referred to as ECDL).*

The term 'computer literacy' used in the Standard covers not only computer skills but also an ability to use these skills in searching for, collecting and processing ICT information.
[...]
When implementing the requirements of this Standard, the minimum teaching programme (in-service training) of not less than 80 hours (2 credits of studies) shall be determined, out of which not less than 40 per cent shall be allocated for individual work and not less than 1/3 of the Programme shall be allocated for the subjects on the technological part of the Standard." (p. 2)

2. REQUIREMENTS FOR CONCEPTION

"The object of the Standard is the competence of the school librarian's competence in the field of information and communication technology.

1. School librarians shall know and be able to:
a. work with the software required for libraries and prepare it for work;
b. use computerized information resources;
c. skillfully use the Internet services;
d. use electronic publications (books, magazines, dictionaries, encyclopedias etc.);
e. use ICT in regular activities of the library;
f. systematically educate their own and school community information culture.

2. When improving professional competence and disseminating professional experience, librarians shall know:
a. methods of improving professional competence by implementing ICT;
b. the strategy of school libraries' modernization and understand the essence of computerized, electronic and virtual library;
c. national information resources, national information systems (Municipalities, LIBIS, LABT, etc.), national registers, cadastres and classifiers, geoinformation systems, computer catalogues;
d. forms and standards of bibliographical information development and dissemination as well as to understand the importance of these activities;
e. peculiarities of using electronic and Internet publications as well as quotation and description standards." (p. 2-3)

3. PROGRAMME OF COMPETENCE EDUCATION
Educological part
"Object of studies: 6. Education of teachers' and students' information culture
Aims of studies:
6.1. To know the requirements of Lithuanian student's general computer literacy standards.
6.2. To know, understand and be able to apply the models of information skills' education (solution of information problems).
6.3. To develop the teachers' and students' information literacy system at school, to educate their information abilities and skills to use ICT.
6.4. To inform teachers about general purpose and subject teaching software used in the educational process which are available at the library.
6.5. To know the main forms of developing and disseminating educological information on the Internet as well as the importance of these activities." (p. 3-4)

Ministry of Education and Science, *Strategy of schools' provision with computer teaching aids*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Computerteachingaids.htm
Original website: *http://www.emokykla.lt/admin/file.php?id=363*

Date: 8 April 2002

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Strategy of schools' provision with computer teaching aids (Summary)

Approved by the Minister of Education and Science of the Republic of Lithuania Order No. 537 - 8 April 2002

ANALYSIS

Integration of TCA into the Lithuanian general education

"One of the aims of providing TCA to schools is to create conditions for all students to acquire knowledge based on information technologies, the fundamentals of which are well-rounded ***information skills****. Following the carried out research,* ***information skills can be classified into several interrelated dimensions of skills and knowledge****. These include:*

1) computer literacy;
2) ***knowledge on information and its handling skills****;*
3) implementation of technology in scientific work, research and data analysis;
4) implementation of technology in musical and visual expression;
5) communication skills;
6) public knowledge;
7) legal knowledge;
8) mature moral values and ethics.

Official educational documents in Lithuania reflect the potential to integrate TCA into teaching and learning of various subjects effectively and to assist in achieving the aims of these subjects as well as ***what and how information skills are educated in Lithuanian general education schools****. These are: curricula of the Lithuanian general education school and standards of general education. More comprehensive analysis into various subjects' aims, tasks, didactic attitudes and content show that ICT and TCA are integrated into various subjects on a very formal level. Information skills and TCA implementation are frequently mentioned when discussing general aims and tasks of subject education; however, they are not specified in its contents and didactic attitudes.* ***Information skills specified in the curricula are not always coordinated with the provisions of educational standards. Curricula lack technological, information and sociocultural competences' relation to other information skills. Skills of handling information, communicating and applying technology are often perceived as having nothing to do with subjects****. Special type schools pay most attention to TCA integration into curricula of various subjects in extensive and specific courses; whereas there is little mentioned about the necessity and capability to apply these means in general courses."* (p. 2)

VISION

"The vision of the Strategy is based on the task set in the Lithuanian National Information Society Development Conception: 'To provide a possibility for each general education school graduate to acquire knowledge based on information technologies, by using adapted aids in all schools: teaching methodological material, Intranet and Internet.' It aims to implement the following main objectives and tasks of the Strategy of Information and Communication Technology Implementation in the Lithuanian Education:

[...]

To integrate education of information culture into the total general education school educational process*; to encourage implementation of innovative learning forms and*

methods: to review curricula and standards as well as to present methodological proposals on how to integrate ICT into teaching various subjects." (p. 5)

[...]

"The main objective of TCA application in the educational process is to modernize the educational process and to create conditions to implement modern Lithuanian education aims:

1) ***to educate important skills of students for well-rounded life in the society of knowledge (learning skills, criticai thinking, creativity, information and technological skills);***
2) *to renovate the content of education and integrate knowledge of various subjects;*
3) *to implement new educational methods oriented to children;*
4) *to form a new culture of new learning and living at school. TCA implementation shall also facilitate solution of other burning problems in education today (e.g. to speed up the educational process and liquidate children's work overload).*" (p. 6)

GENERAL PRINCIPLES OF THE STRATEGY IMPLEMENTATION

"When integrating TCA, teaching how to use ICT during the lessons of information shall be gradually replaced by the development of such skills during lessons of various subjects at the same time achieving the educational aims of those subjects. Therefore, amendments in various curricula of various subjects shall be coordinated with the amendment of information subject curricula." (p. 8)

Rozporządzenie Ministra Edukacji Narodowej i Sportu z dnia 26 lutego 2002 r. w sprawie podstawy programowej wychowania przedszkolnego oraz kształcenia ogólnego w poszczególnych typach szkół.

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/poland/menis.htm*
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Date: 26 February 2002

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Rozporządzenie Ministra Edukacji Narodowej i Sportu
z dnia 26 lutego 2002 r.
w sprawie podstawy programowej wychowania przedszkolnego oraz kształcenia ogólnego w poszczególnych typach szkół.

Disposition of the Ministry of National Education

Warsaw, 26 February 2002

Among the expected (and mandatory) achievements of pupils are: **competence in retrieval, selection and use of information from different sources** as well as ITC literacy.
Furthermore, **teaching-learning contents of numerous classes include knowledge, skills and values related to information literacy**.

Rozporządzenie Ministra Edukacji Narodowej i Sportu z dnia 18 kwietnia 2002 r. w sprawie określenia standardów nauczania dla poszczególnych kierunków studiów i poziomów kształcenia.

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/poland/menis1.htm*
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Rozporządzenie Ministra Edukacji Narodowej i Sportu
z dnia 18 kwietnia 2002 r.
w sprawie określenia standardów nauczania dla poszczególnych kierunków studiów i poziomów kształcenia.

Policy document of the Ministry of National Education

Warsaw, 18 April 2002

It established **standards for academic education.**
Information literacy elements are rare and present only in syllabi of: Library and Information Studies, Pedagogy, Architecture and few others.

The Council of Ministers, *National Strategic Reference Framework - Preliminary draft*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/poland/nsrf.htm*
Original website: *http://www.funduszestrukturalne.gov.pl/informator/npr2/npr/nsro_en.pdf*

Date: 23 September 2005

Institution:
The Council of Ministers <*http://www.kprm.gov.pl/english/rm.html*>

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The Council of Ministers

National Strategic Reference Framework - Preliminary Draft

Warsaw, 23 September 2005

Main contents

INTRODUCTION
"The National Strategic Reference Framework is a strategic document and contains the description and justification of the selected priorities in the context of objectives and priorities provided for in the CSG - Community Strategic Guidelines and a brief description of the particular operational programmes delivered in its framework. Moreover, the document presents indicative allocations of funds for particular operational programmes and the implementation system.
The document was developed on the basis of a widely consulted draft of the National Development Plan, accepted by the Council of Ministers on 6 September 2005". (p. 5)

1. DIAGNOSIS OF THE SOCIO-ECONOMIC AND SPATIAL SITUATION

2. DIRECTIONS AND EFFECTS OF THE STRUCTURAL POLICY (INCLUDING THE REGIONAL POLICY) IN POLAND IN 2000-2006

3. COMPLIANCE WITH THE COMMUNITY POLICIES AND THE POLISH AND REGIONAL PROGRAMMING DOCUMENTS
"Indicative strategy of the IT development of Poland until 2013 and a long-term forecast of the information society transformation until 2020 *(adopted by the Council of Ministers on 29 June 2005) constitutes a forecast of the IT development of Poland after the year 2006.*
This document concerns the key areas for the information society development [...]
It also assumes the support for the development of the ICT infrastructure of the state, and in particular provision of a common broadband access to the Internet and electronic services as well as ***the development of the skills necessary for active and creative participation in the information society services, and in particular adaptation of the educational system to the needs of the knowledge-based economy"*** (p. 59).

4. STRATEGY OF THE SOCIAL AND ECONOMIC DEVELOPMENT OF THE COUNTRY

5. EVALUATION OF THE NATIONAL STRATEGIC REFERENCE FRAMEWORK FOR 2007-2013

6. OUTLINE OF THE OPERATIONAL PROGRAMMES AND THE MEASURES IMPLEMENTED UNDER THE OPERATIONAL PROGRAMMES

7. FINANCING

8. IMPLEMENTATION SYSTEM

Ministry of Education and Science, ALFIN and the Fundamental Act of Education: Annex 1 on basic competencies

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/ALFINdecree.htm*
Original website: *http://www.mec.es/mecd/gabipren/documentos/anexos-rd-eso.pdf* (in Spanish)

Date: February 2007

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ALFIN and the Fundamental Act of Education: Annex 1 on basic competencies

Decrees on official curriculum for the compulsory primary and secondary education

The *Annex 1* to the Fundamental Act of Education (LOE - Ley Orgánica de Educación 4 May 2006)

The section is devoted to **basic competencies, among which there is Information Literacy under the name of "Information management and use and digital competence".**

BASIC COMPETENCIES

"The incorporation of basic skills and competencies into the curriculum allows to focus on the essential learnings from an integrative approach oriented to the practical application of acquired knowledge. Therefore their basic characteristic. A boy or a girl must have developed them during his/her mandatory education in order to achieve his/her personal fulfilment, to practise active citizenship, to start his/her adult life in a satisfactory way, to be able to successfully engage in lifelong learning.

The inclusion of basic skills and competencies into the curriculum serves various purposes. First, to integrate different learnings, both formal - incorporated into the different areas or subjects - and informal or no formal. Second, to allow all the students to integrate their learnings, put them in relation with the different contents and effectively use them when they become necessary in different contexts. Last, to orient teaching... in order to identify the essential contents and evaluation criteria and, in general, to inspire the decisions on learning/teaching process.

[...]

The work in the curriculum areas and subjects... must be accompanied by different organizational and functional measures essential to the development [of the basic skills and competencies]. The organization and running of the centres and classrooms, students' participation, the rules of the internal system, the use of didactic methodologies and resources, or the conception, organization and functioning of the school library... can facilitate, or hinder, the development of skills and competencies related to communication, the analysis of the physical environment, creation, coexistence and citizenship, digital literacy.

[...]

Within the framework of the proposal submitted to the European Union... ***eight basic skills and competencies*** *have been identified:*

1. Skill and competence in linguistic communication
2. Skill and competence in mathematics
3. Skill and competence in knowledge and interaction with the physical world
4. Information management and use and digital competence
5. Social and citizenship competence
6. Cultural and artistic skill and competence
7. Skill for learning to learn
8. Autonomy and personal initiative

In this Annex descriptions, aims, goals and characteristics of these competencies are gathered and the basic level within each competence, which must be met by all the students completing compulsory secondary education, is stated." (p. 1-2)

4. INFORMATION MANAGEMENT AND USE AND DIGITAL COMPETENCE

"This competence consists of having at one's own disposal ***skills to search for, obtain, manage, process and communicate information and to transform it into knowledge.*** *It includes* ***different skills, ranging from access to information to the transmission of processed information using different supports,*** *including the use of ICTs as an essential tool for getting informed, learning and communicating.*

[The competence] is related to ***searching for, selecting, recording, managing and using or analysing information, using different techniques and strategies to access it according to its sources and supports*** *(oral, printed, audiovisual, digital and multimedia).*

[The competence] requires the command of basic specific languages (textual, numerical, iconic, visual, graphic and sound) and of the rules of their decoding and transfer, knowing how to apply in different situations and contexts knowledge of different types of information, its sources, possibilities and localizations, furthermore the most used languages and supports.

Having information at one's own disposal doesn't automatically produce knowledge. ***Transforming information into knowledge requires reasoning skills in organising, relating, analysing, synthesising information and in making deductions and inferences at different level of complexity;*** *in short,* ***in understanding and integrating information into previous patterns of knowledge.*** *At the same time, it means communicating acquired information and knowledge using expressive resources which include not only different languages and specific techniques, but also the possibilities offered by ICTs.*

Being competent in using ICTs as a tool for intellectual work includes the ability to use them in their double function of transmitting and generating information and knowledge. They will be used in their generating function, for ex. as tools for mathematical, physical, social, economic, or artistic models. At the same time, this competence allows to properly process, handle, manage and use abundant and complex information, to solve real problems, to make decisions, to work in collaborative environments in order to participate in formal and informal learning communities, and to generate responsible and creative products.

The digital competence includes knowing how to use ICTs extracting the highest performance...

[...]

Likewise, it allows to take advantage of provided information and to analyse it critically by personal and independent work and collaborative activities, on both synchronic and diachronic aspects, knowing and successfully interacting with physical and social environments, which become wider and wider; moreover, to use ICTs as tools to organise, process, and manage information in order to achieve objectives and goals in learning, work and leisure.

In short, the digital competence entails making regular use of technological resources in order to efficiently solve real problems. At the same time, it allows to evaluate and select new information sources and technological innovations as they emerge, depending on their utility and capacity to undertake specific tasks and objectives.

In summary, ***the information management and use and the digital competence involve being a person autonomous, effective, responsible, critical and reflective in selecting, managing and using information and its sources, and the different technological tools; as well as having a critical and reflective attitude to evaluating available information and contrasting it when necessary, and observing ethical rules socially agreed upon in order to regulate the use of information and its sources on its different supports".*** (p. 5-6)

Ministry of Education and Science. National Centre for Educational Information and Communication, *A framework document: the school library within the educational reform*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/schoollibrary_document.htm
Original website: *http://w3.cnice.mec.es/recursos2/bibliotecas/archivos/docmarco.rtf* (in Spanish)

Date: 1995

Institution:
Ministry of Education and Science (MEC) <*http://www.mec.es/*>. National Centre for Educational Information and Communication <*http://www.cnice.mec.es/*>

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Mª Jesús del Rio (advisor of the General Subdivision for Teachers Training)

A framework document: the School Library within the educational reform

Educar en la sociedad de información (Educating in the information society). Serie Monografias, n. 1

Publisher: Ministry of Education and Science (MEC)

Madrid, 1995

Main contents

INTRODUCTION

"In this document a set of proposals is presented, whose objective is to establish an intervention framework general and consistent with regard to school libraries. ... the text is structured in 5 chapters:

- ***The concept of school library,** where features, functions and necessary requirements are fixed so that the school library achieves its educational goals.*
- ***The school library within the MEC** [Ministry of Education and Science] management, where the main initiatives that have been adopted in the last ten years for the promotion of school libraries are analysed.*
- ***The school library in the countries of our surroundings,** where the models chosen by other countries are studied* [...]
- ***Conclusions,** where data contributed from the perspective of how to draw up a plan adapted to the Spanish educational context is valued.*
- ***Proposals** aimed at defining a school library model fitted to the Spanish circumstances and establishing action lines in order to promote the development of this model in the educational centres.*

[...]

... it has tried to provide a large framework for establishing a consistent intervention in the field of school libraries..." (p. 5-6)

I. THE EDUCATIONAL REFORM AND SCHOOL LIBRARIES

II. THE SCHOOL LIBRARY AND ITS NEW CONCEPTION

1. The school library: its objectives and functions

2. What respects assure that the school library works well

***"The school library responsible has to promote and facilitate the exchange, spreading and dissemination of all types of information** (administrative-legal, pedagogical and educational, cultural).*

- To offer resources and chances for learning

The school library responsible cooperates with the other teachers on curriculum planning and development, in a teaching-learning process based on a plurality of educational resources.

He/she suggests strategies, approaches and uses, spreads knowledge and promotes use of the all available didactic materials.
In collaboration with the other teachers, he/she promotes independent and responsible learning... in order to tackle interdisciplinary issues and develop and implement cross-cutting themes.
[...]
- To participate in the training of pupils in using information sources
"The school library responsible organises, together with the teaching team, activities related to information use, with a disciplinary or interdisciplinary focus. He/she helps pupils identify, locate, select documents pertinent to the search objectives. He/she initiates pupils to learn and interpret the different document types according to their nature, support, level of arrangement, standard etc... Together with other teachers, he/she has to promote and develop the rearrangement of the retrieved information, enhancing its critical analysis.
- To promote reading as entertainment and leisure medium." (p. 16)

3. Support services

III. THE SCHOOL LIBRARY WITHIN THE MINISTRY OF EDUCATION AND SCIENCE MANAGEMENT

1. Administrative legai framework

2. Actions undertaken for the establishment or development of school libraries

3. Educational documentation services

4. Collaboration within public libraries and school libraries

IV. THE SCHOOL LIBRARY IN THE COUNTRIES OF OUR SURROUNDINGS

V. CONCLUSIONS

VI. PROPOSALS

1. Support network for school libraries

2. Action areas for setting up the network

3. Development phases of the program and concrete actions

Libraries for lifelong learning: Toledo Declaration on information literacy

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/ToledoDeclaration.htm*
Original website: *http://eprints.rclis.org/archive/00006836/01/Merlo_IASL.pdf*

Date: 3 February 2006

Institution:
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<http://www.jccm.es/biblioclm/>

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Professionals from public, school and university libraries, university professors and representatives of the administrations formed an **information literacy working group** (including 80 members), that organised **on 2-3 February 2006 the working seminar** at the **Castilla-La Mancha Regional Library in Toledo**:

Libraries, learning and citizens: information literacy

The following document, serving as the basis for the development of information literacy in Spain, was approved:

Libraries for lifelong learning: Toledo Declaration on information literacy (p. 5-7)

Toledo, 3 February 2006

"We live in a knowledge society where we must learn throughout our lives and develop skills in using information in accordance with our personal, family and community goals, always in an atmosphere of social inclusion, cultural preservation and intercultural respect. This has been affirmed by numerous declarations of international organisations, and it has also been accepted by information professionals through institutions such as IFLA and manifestos such as the ***Prague Declaration: Towards and Information Literate Society*** *and the* ***Alexandria Declaration on information literacy and lifelong learning.***

Information literacy is an essential tool for the acquisition of information competencies, as well as for citizen development, participation and communication. *Knowing how to access information and use it effectively, critically and creatively have become necessary skills. Therefore, information and education professionals in Spain met in Toledo for the working seminar on "Libraries, learning and citizens: information literacy" in order to analyse how this concept can be applied as well as the situation of information literacy programmes in Spain. Another of their aims was to propose priority lines in different regional areas. After their discussion, they formulated* ***the following considerations addressed to society in general, authorities, institutions, social actors and professionals.***

1. Libraries and their staff contribute to maintaining and improving the educational level of the population as a whole through their facilities, resources and services and through the training and reading promotion activities they conduct.

2. Libraries and information centres should design and implement training activities in an effective manner, in coordination with the institutions responsible for providing training in basic competencies.

3. Institutions should promote the ongoing professional development of library employees in order to ensure that they are constantly updated on any type of information affecting the groups they serve.

4. Libraries should have a specific training policy for all their staff members which would enable them to act in improving the information literacy of citizens and make it possible for them to work towards lifelong learning.

5. The compulsory educational system is the starting base for training in the use of information, and therefore, it is necessary to give school libraries a lead role as resource centres for learning and acquiring competencies.

6. The curricula of universities that train information professionals should incorporate content relating to information literacy and the pedagogical issues involved in teaching it.

7. Professional associations should give priority in their offering of ongoing training activities to the new challenges posed by information literacy and lifelong learning.

8. The actors involved in the promotion of information literacy should establish local, provincial, regional and national fora as platforms for inter-institutional reflection, dissemination and cooperation.

9. The main points of reflection for these fora, which could represent the first steps in a national information literacy promotion agenda, should be:

- *9.1 Development of a model and specific framework for the key competencies included in information literacy.*
- *9.2 Development of an information literacy curriculum proposal adaptable to different library, disciplinary, learning and life contexts, depending on the population segments targeted.*
- *9.3 Implementation of an activities programme to develop social awareness about the need for information literacy.*
- *9.4 Systematic gathering of examples of best practices in evaluating training programmes and the certification of individual levels.*
- *9.5 Creation, maintenance and updating of a specific website on key literacies and competencies, as a resource and support centre for the fora and initiatives that are developed.*
- *9.6 Identification of key partners in different areas in order to establish, update, promote and disseminate the agenda of actions.*
- *9.7 Establishment of an effective and fluid mechanism for participation in the international lifelong literacy agenda, which would take the competencies and responsibilities in each area of action into consideration.*

10. Cooperation in the development of key competencies and literacies should follow two lines:

- *10.1 On the one hand, information professionals should work on the interaction between theory and professional practice, and secure cooperation among information centres, so that information training advances and is in line with its educational objectives.*
- *10.2 On the other hand, institutions, organisations and professionals interested in promoting information competencies should establish relations with each other in order to coordinate and develop joint activities.*

Those in attendance at the Toledo Seminar will undertake to perform whatever actions are appropriate with institutions, organisations and associations in their professional and geographic spheres in order to obtain public support of the considerations reflected in this document and their commitment to act on behalf of information literacy".

The document was **originally written in Spanish**, and entitled ***Bibliotecas por el aprendizaje permanente: Declaración de Toledo sobre la alfabetización informacional (Alfin).***
It is **freely available online** at:
http://travesia.mcu.es/S_ALFIN/ficheros/Declaracion_Toledo.pdf.

APRÈN - UPC libraries strategic plan 2010

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/APREN.htm*
Original website: *http://bibliotecnica.upc.es/Pla_estrategic/apren2010.pdf* (in Catalan)

Date: January 2007

Institution:
Technical University of Catalonia (UPC) <*http://upc.edu/*>.
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Technical University of Catalonia (UPC). Library and information Services

APRÈN 2007-2010
4th UPC libraries strategic plan
"The libraries support the realization of the new European Knowledge Space"

Barcelona, January 2007

The 4th UPC libraries strategic plan mainly aims at accelerating and encouraging their shift into active resource centres and high-quality services in order to meet university needs for learning, lifelong learning and research.
The main APRÈN 2010 mission is to integrate UPC libraries - environments rich of information, technology and people - **into university teaching, learning and research activities** in order to achieve UPC challenges and goals **within the European Knowledge Space: Education and Research.**

"APRÈN is the fundamental goal of the university's educational model, which is student-centred: the student has to learn knowledge and skills necessary for his/her professional and private life.
[...]
APRÈN is to search for data, to manage information, to discover and generate knowledge in the new global information environment." (p. 3)

Main contents

1. The UPC Library and Information Services and the strategic planning

2. The challenges 2010: the new European Knowledge Space

Higher education challenges
"In the next years the universities have to meet the following changes:
- *The increase of demand for higher education*
- *The internationalisation of education and research*
- *The multiplication of knowledge production spheres*
- *The knowledge reorganization, which results in a greater diversification and specialisation increase*
- *The appearance of new expectations for universities, which will become reflection centres on knowledge and a debate forum between scientists and citizens.*

[...]
... two big milestones which the European Union planned for 2010...: the Higher Education European Space (EEES) and the European Space for Research (EER)". (p. 7)

The UPC toward its own library model
"The UPC defines its libraries as 'Centres of scientific, technical and humanistic information, which support their users in learning, research and educational processes...'. UPC Statute, Art. 37.

The Network of University Libraries (REBIUN), integrated with the Conference of the Spanish University Rectors (CRUE), defines an university library in the following way: ' A centre of resources for learning, teaching, research and all the activities relating to university functioning and governance on the whole. The Library's mission is to improve the access and the dissemination of information resources and to collaborate in the processes of knowledge creation, in order to contribute to achieving the university's objectives.'"
[...]
In the Spanish arena,"*the concept is connected to the LRRC - Learning & Research Resource Centre, CRAI in Spanish.*" (p. 8-9)

The new professional roles of library staff
"*The changes during the last years and the future challenges of university libraries make essential training plans and programs for professionals in order to tackle new tasks and projects.*
It will be necessary to enhance the professional development of library and information workers, by developing specific profiles to provide added value to services."
Among them, there is "***User education on information skills and ICT tools***". (p. 9)

3. Methodology of the strategic plan

4. Mission

Mission
"The libraries, as environments rich of information, technology and people, must be integrated into teaching, learning and research activities of the UPC in order to contribute to meeting the new challenges of the European Knowledge Space.

Vision
To become active centres of resources and high-quality services, in order to satisfy the needs for learning, lifelong learning and research of the university community.
[...]

Values
Quality - Accessibility - Sustainability - Cooperation - Loyalty - Technology - Visibility - Multilinguism - Solidarity - Communication - Free access - Multiculturality - Professionalism" (p. 11)

5. Strategic issues

- **OF RESOURCES**
  - **1/ Facilities**
  - **2/ Technology**
  - **3/ Collections**
  - **4/ Bibliotecnica**
- **OF SERVICES**
  - **5/ Library services**
  - **6/ Information skills**
    "*We will promote the learning of transversal competencies of students and teachers focussing on information skills*"
    Environment
    "*... The UPC libraries participate and actively collaborate in the learning process of our University community through specialised training on information skills necessary for*

locating, retrieving, evaluating, using and communicating scientific and technical information. In this way the decision-making, critical and creative thinking capacities are improved and, above all, an effective communication is favoured. These competencies are essential for our graduates...
The UPC libraries prepare the educational program for information literacy of their users offering different training sessions for all types of users and academic levels. These training activities have to be progressively integrated into the curricula of the different technical degrees and it will be also necessary to enhance this training offer guaranting the academic recognition of credits.
In order to accomplish this task, librarians have to set up a new educational profile and prepare training programs tailored for each of nine EEES UPC degrees.

Goal of the issue
To implement training activities to develop information skills related to transversal competencies necessary for university students and teachers to effectively manage scientific and technical information.

Action lines and specific objectives

1. Information skills for degree and post-degree students

To develop the IL training program with teachers' recognition and within the degree and postdegree curriculum.

2. Information skills for academic staff: university teachers and researchers (PDI) and administration and services staff (PAS)

To plan, organise and deliver IL training courses for PDI and PAS in collaboration with the Institute of Education Science (ICE), the Education and Welcome Centre (OFA - Oficina de Formació i Acollida) and other UPC units.

3. Virtualisation, distance learning, learning programs and other educational materials

To prepare, update and disseminate educational materials (learning programs, guides to use, etc.) in order to develop and extend training activities to all libraries and develop self-learning of users.

4. Specialisation for trainer-librarians

To promote the recognition of the Trainer-Librarian as a professional at the UPC and to develop his/her knowledge, competencies, skills and aptitudes necessary to carry out training activities.

5. Cooperation and leadership

To promote, plan and coordinate actions and alliances together with other university libraries, consortia and networks in order to obtain that information literacy will be a key transversal competency within the university curricula and within the EEES framework.

Some indicators
- *Number of users who participated in training activities*
- *How does training contribute to good academic results*
- *Percentage of students who successfully complete training courses with credit recognition*
- *Level of technological and pedagogical innovation in training for trainer-librarians*
- *Number of training hours* (p. 18)

7/ UPC knowledge

8/ Access to culture

- **OF PEOPLE**

9/ Professionals

"We will develop the professional competencies necessary for managing library resources and services in the best way possible"

Environment

"... This new flexible and open culture is the success key to understand the transformations in the information and documentation sector, in users' needs and in libraries and their services. Therefore it is necessary to define and implement new emerging professional roles based on new knowledge, expertise and competencies.

[...]

*... **new roles appear:***

- Manager of collections and library services

- Manager of digital contents

- Manager of scientific and technical information

*- **Information skills manager and trainer**"* (p. 21)

10/ Organisation and management

"We will continue to improve the organisation and management of libraries, in order to adapt them according to users' needs and support the university's changes and challenges"

Environment

[...]

The libraries have to prepare themselves for being present in the new pedagogical models, in the training delivered through the web, in user education and in the exploitation of university digital resources." (p. 22)

6. Planning and execution

7. Acknowledgements

8. Preliminary works

9. References

10. A synopsis

Paideia - UPC libraries strategic plan 2000-2005

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/UPCPaideia.htm*
Original website: *http://bibliotecnica.upc.es/Pla_estrategic/Paideia_ang.pdf*

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Originally published in Catalan in May 2000:

Cristina Garcia Testal, *Paideia. Programa Estratègic de les Biblioteques de la UPC 2000-2005.* "Métodos de Información (MEI)", Vol. 7, N. 37 (May 2000), p. 23-26.

Freely available online also at: *http://eprints.rclis.org/archive/00001215/01/2000-37-23.pdf*

Cristina Garcia Testal, *Paideia - UPC libraries strategic plan 2000-2005.*

Technical University of Catalonia (UPC). Library and information Services Information, Image and Publications Service of the UPC

English translation: **Barcelona 2002**

Translated into **English** by **Gemma Garcia, Berta Loayza, Marta Lopez.**

Main contents

Paideia

Mission

"*The UPC libraries are active centres of documentary and digital resources in scientific, technical and cultural information that aims to increase the quality level the UPC gives to its members in the learning, research and training process in order to become citizens prepared to live in a global world*". (p. 6)

Visions

Users and their needs

Five strategic points

- **1. Library and learning: Library resources and library services in the learning process**
  From teaching to learning: transforming the teaching process in a continuous learning process
  "*This change applies not only to the pedagogic processes related to some specific studies or taken by professors, but modifies all the university community: services, staff, etc... In this respect* ***libraries*** *– services that make learning and information access easier -* ***become now more active and effective in this new learning process than ever, providing*** *reading spaces for individual or team work, literature related to the needs of students, self-learning areas for none-university programs, Internet access,* ***training in information and resource tools...*** *All this* ***in order to achieve an autonomous student when searching and managing information.***" (p. 10)

Among the **aims** there is:
"- *Train users in the relevant skills for a continuous learning to live in a global world.*" (p. 11)

Among the **values** there is:
"- *Professional experience in user training, electronic tools usage, experts in management and promotion of reading and self-learning services, and planning and assessing of library resources related to user needs.*" (p. 11)

General objective: "*Achieve to satisfy basic present and future information needs of the UPC members in their learning process with a high quality level*". (p. 12)

Action areas
1.1 User training
"*The user of the library must be educated in the necessary skills to manage all this information, focussing on concepts such as continuous learning and self-learning. This means, though, the necessity to transmit students the idea that library is a central element in their training cycle.*
Users must know what resources and services the library provides, must learn how to use the electronic tools, how to manage and deal with different documentation, learn and foster their skills in an autonomous way, to search for literature supporting their learning. This is the ***knowledge and basic skills*** *that libraries must offer them in the different library training sessions.*" (p. 12)

Among the **indicators** there are:
"- *Number of training courses or sessions*
- *Number of participants to the training courses*" (p. 13)

- **2. Library and research: Library resources and services for research and technological innovation**
From information to knowledge: transforming information into a new significant knowledge
"*Libraries are a unique opportunity for research, since they provide the necessary support, tools and time for researchers. Access to the best bibliographical collections, world-wide specific databases, journals and relevant literature of scientific community in a short period of time is one of the best revolutions of our times. Nowadays, via Internet, access to the book catalogues and different documents of libraries all over the world has become a reality.*" (p. 14)

Among the **aims** there is:
"- *Train users in their search for electronic tools to access, manage and handle scientific information*" (p. 14)
Among the **values** there is:
" - *Professional expertise in training users and resource management, search services, and analysis and assessment of scientific documentation*" (p. 15)

General objective: "*Intensifying the library role as a supplier of information resources for the research and creation of UPC knowledge, making information as one of the key points in the research field.*" (p. 16)

Action areas
2.1 User training
"*Users should know how to access to databases and specialised periodicals, consult specialised information, use the specific services for researchers, manage, handle and produce information. These are the* ***basic research skills*** *that libraries must show to*

their users in the library training sessions." (p. 16)
[...]
2.5 Collaboration with enterprises, professional associations and other institutions
"*It is very important to establish, develop and achieve collaboration agreements with external university members such as enterprises or professional associations in order to obtain external resources and offer them the our information and documentary services.*" (p. 17)

Among **the indicators** there are:
"- *Number of training courses or sessions*
- *Number of participants to the training courses*
- *Common projects library/ research lines*" (p. 13)

- **3. Library and network: Digital resources and library services**

- **4. Library and humanism: Library resources and services for humanism training**

- **5. Library and organisation: Resources and management library services**

Survey-reports

Information literacy in Europe: a literature review

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/estonia/EUIL_review.htm*
Original website: *http://informationr.net/ir/8-4/paper159.html*

Date: July 2003

Institution:
Manchester Metropolitan University <*http://www.mmu.ac.uk/*>.
Department of Information & Communications <*http://www.hlss.mmu.ac.uk/infocomms/*>

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Sirje Virkus, *Information literacy in Europe: a literature review.*

This paper was published in "Information Research", Vol. 8, No. 4, **July 2003**.

Abstract
It examines the **developments in information literacy in Europe** and provides **an overview of the concepts** used and discussed by European authors.
Some examples of information literacy initiatives in schools and the higher education sector, as well as of institutions and organizations, projects and conferences concerned with information literacy, are given.
Some research initiatives are also introduced. The overview is based on literature reviews and personal observations and involvement and presents a selective review.

The study reform as a chance for the university libraries

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/reform.htm*
Original website:
http://www.informationskompetenz.de/aufsaetze-vortraege/bibliothekartag_2005/schwill_vogt.pdf
(in German)

Date: 16 March 2005

Institutions:
- University of Bonn <*http://www.uni-bonn.de/*>.
- Bonn University and State Library <*http://www.ulb.uni-bonn.de/*>.

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Universitäts- und Landesbibliothek Bonn
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Daniela Schwill - Renate Vogt, *The study reform as a chance for the university libraries*

This report is presented at the 94th **Annual Meeting of German Librarians in Düsseldorf - Section 27: Information literacy in a changed education landscape II: new demands of scientific libraries and the user-oriented special division.**

Abstract

The study reform gives **a chance to establish teaching of information literacy as an integrating part of the university studies** and to follow the Anglo-American and Scandinavian models. The **framework issues of the Bachelor reform**, as **modularisation** and **the credit system** (ECTS), are presented. Different strategies are explained through concrete examples, with focus on **how the university libraries can integrate their IL offers into the Bachelor structure and put it into practice.**

The presentation has been completely translated into English.

The university study reform focuses on **2 key issues**:

- **the Europe-wide reform of the university study structure** through the **introduction of equivalent degrees and certificates** (an aim of the Bologna Process)
- **a structure** formed by **2 main cycles (Bachelor** and **Master)** and by **a third one (Doctorate)**

Targets

At European level: general political aims
At national level: specification
At Land level: setting out the key points / strategy and agenda of the Lands
At university level: refining and improving profiles / transformation

International agreements for the Bologna process

Lisbon Agreement (1997)
Sorbonne Declaration (1998)
Bologna Declaration (1999)
Communiqués (Prague, 2001; Berlin, 2003)

Targets at Federal level:

Law providing guidelines for university (HRG)
Conference of Ministers of Education (KMK) and German Rectors' Conference (HRK)
Accreditation Council
Bund-Laender Commission for Educational Planning and Research Promotion (BLK)
Science Council, Founder Federation for the German Science, Council for Higher Education (CHE).

Targets at Land level (NRW - Nordrhein Westphalen):

Law concerning university in NRW (HRWG - University Reform Advancement Law)
Student Accounts and Finances Law (StKFG)
Decrees of the Ministry for Science and Research (MWF)

ECTS credit system

Credits = **quantitative** measure of the workload of a student
1500-1800 hours are planned for each academic year, which corresponds to about 45 work weeks of 40 hours
1 credit (LP) corresponds to 25-30 hours of the students work time
According to ECTS: **60 LP per academic year**

- Bachelor (3 years) 180 LP
- Master (2 years) 120 LP

Modularisation

A course of studies consists of **modules**
Module = thematic and time interrelated brick of the course of studies; combination of thematic interrelated lessons
Module duration: at most 2 semesters (from where mobility)
Definition of a qualification aim (starting from the qualification aim of the course of studies)

Modularisation
Credits are awarded only for modules successfully completed
Modules are concluded with a test (valid as an examination)
Tests are conducted according to the university law (reliability and validity as an examination)
There are graded and ungraded modules

Qualification aims

Definition of a curriculum profile of a studies course
Bachelor = the first qualifying professional degree (KMK 2003)
Definition of the modules aims (partial qualifications), that lead to the curriculum aim of the studies course and determine the curriculum profile
Examples for key competencies in a reference decree of the Ministry for Science NRW (2001)

Key qualifications

Key qualifications are not clearly defined in the general targets
Each university sets out its key issues
Each university meets its quantitative targets

Key qualifications
Aim:
Strengthening of information literacy as key qualification in the university framework targets

Key qualifications at the Bochum University

- Foreign languages
- Presentation, communication and argumentation skills
- Information technologies
- Interdisciplinary study units and study units of other subjects
- Practice

Target: modules formed by at least 3 disciplinary fields, altogether 30 LP

Key qualifications at the Bochum University
- Foreign languages
- Presentation, communication and argumentation skills
  - **Information literacy**
- Information technologies
- Interdisciplinary study units and study units of other subjects
- Practice

Key qualifications at the Wuppertal University
- Teaching, accountability, knowledge transfer
- Information management
- Foreign language/specialised language
- Economics, organisation and company creation

Target: modules formed by competence fields, altogether 18 LP

Key qualifications at the Wuppertal University
- Teaching, accountability, knowledge transfer
- Information management
  - **Research competence**
- Foreign language/specialised language
- Economics, organisation and company creation

Key qualifications at the Bonn University
- Methodical competencies
  - **Media and IT competence**
- Interdisciplinary additional qualifications and skills
- Scientific research and information supply
- Semester abroad

Targets: at most 9 LP

Additive / integrative

Additive means:
- Key qualification and skill are taught in the framework of an independent module

Integrative means:
- Key qualification and skill are taught within the modules offered by the subjects

Information literacy in the additive model

With regard to the framework targets for modularisation it is necessary to mind for ex.:
- a minimum number of SWS - Semester Credit Hours and LP per module

The University can set targets for the key skills and qualifications regarding, for ex.:
- a combination of fields
- a minimum and a maximum number of awardable LP

Information literacy in the additive model

There are different possibilities:
- interdisciplinary and disciplinary
- compulsory module, elective compulsory module, or elective module
- provided only through the library or in cooperation with other facilities
- different teaching forms
- graded and ungraded

University of Bochum: block seminar

"Information literacy in the age of the Internet"

- the university library is the organiser
- for all disciplines
- two-week block seminar before the beginning of each academic year, 40 contact hours, 5 LP
- grading: active participation, oral presentation, home work
- from 10 to 12 participants

University of Konstanz: romanistics course

"Information literacy for students of Romanistics"

- the university library is the organiser
- for students of romanistics
- course with 2 SWS, 3 LP
- at most 25 participants

University of Düsserdolf: anglistics block seminar

"Research competence and knowledge management in Anglistics"

- the university library is the organiser
- for students of anglistics between the 2nd and the 3rd semester (in the elective compulsory field with 18 LP)
- two-week block seminar, 60 contact hours, 4 LP
- examination requirements: class test or written homework, graded
- at most 45 participants (till now!)

Quality - Quantity

Seminars/ courses/ exercises
with at most 25 participants and large part dedicated to practice: this leads to good results
But: **broad effect?**
efficient staff employment?
Alternative: other teaching form

University of Duisburg: Arts Management Lecture

"Digital media"

- the university library is the organiser (4 double hours) and the Centre for Information and Media Services
- compulsory course for BA Arts Management
- lecture with 2 SWS, 2 LP
- examination requirements: class test with multiple choice questions
- about **180 participants** (compulsory attendance!)

University of Bonn:

University Library + University Computer Centre
Interdisciplinary basic lecture
2 SWS
at most 300 participants
+
Field-specific, supported by the University Library/University Computer Centre
Field-specific parallel course
2 SWS **= 6 LP**
examination requirements

or

Field-specific seminar building on the basic lecture
2 SWS or 30 contact hours = **6 LP**
examination requirements

Information literacy in the additive model means:

- broad windows of opportunities
- visibility of the library in teaching

But:

- organisation on library's own responsibility
- examination requirements to be tested
- in mandatory courses: big responsibility and high employment of staff
- in elective courses: hardly calculable amounts of participants

Information literacy in the integrative model:

- to find appropriate modules
  - optimum: integration into a compulsory module; all the students are reached without redundancy
- to find appropriate terms and dates
  - for the humanities at the beginning of the studies
- to anchor information literacy in the module description as a learning goal
- intense contacts with the subject
  - co-operation with different teachers
  - to establish professional relations in an easier way

University of Bonn: Economics in the 1st term

Subject with 300 study beginners!
Aim: all the students in the 1st study year should receive an introduction to literature searching and information supply.

University of Bonn: Economics in the 1st semester

Economics lecture	2 SWS
Economics tutors seminar	2 SWS
Business studies lecture	2 SWS
Business studies tutors seminar	2 SWS
Mathematics lecture	2 SWS
Mathematics tutors seminar	2 SWS
Statistics lecture	2 SWS
Statistics tutors seminar	2 SWS

University of Bonn: Economics in the 1st semester

Economics lecture
Economics tutors seminar

Business studies lecture **strengthening**
Business studies tutors seminar **IL**

Mathematics lecture
Mathematics tutors seminar

Statistics lecture
Statistics tutors seminar

University of Bonn: Economics in the 1st term

- In the 1st semester the students have 4 compulsory modules each with 4 SWS lecture and accompanying tutors seminars: no possibility of choice!
- **Information literacy is formally integrated into the Business studies module**
- In the first two semester weeks: all tutors teach IL basics
- The University Library trains the tutors
- The University Library makes available lecture notes, examples and exercises with solutions.

University of Bonn: Economics in the 2nd term

- 5th semester: decision for seminar and theme of the seminar work
- Preparation of the seminar work
- 6th semester:
  - seminar
  - Bachelor work (derives from the seminar work)

University of Bonn: Economics in the 2nd term

- 5th semester: decision for seminar and theme of the seminar work
  - **Information literacy crash course (part of the seminar)**
- Preparation of the seminar work
- 6th semester:
  - seminar
  - Bachelor work (derives from the seminar work)

University of Bonn: Economics in the 2nd term

The University Library holds a crash course at the end of the 5th semester

- **compulsory essential element of the seminar**
- preparation for the seminar and Bachelor work
- **main issues agreed with the seminar contents** decided with teachers
  - literature searching
  - factual databases
  - presentation
  - scientific publishing
  - etc.

Conclusion 1

- No better solutions are available
- Within a university there are different models for the subjects
- According to the framework requirements each Library should find its own solutions in the university and in the disciplinary fields
- A general concept should be stressed:
  - **Plurality: YES**
  - **Complexity: NO**

Conclusion 2

- With the integration into the study programs libraries assume **obligations and duties**
- They must **reliably** provide services as well as guarantee the good **quality** of them

Therefore:

- rightly evaluate costs and staff abilities and skills!
- the integrative model means taking a fewer risks

Links about this topic

www.bologna-bergen2005.no
www.hrk.de
www.kmk.org
www.akkreditierungsrat.de
www.blk-bonn.de
www.wissenschaftsrat.de
www.stifterverband.de
www.informationskompetenz.de

Organisation for Economic Co-operation and Development (OECD), *Reviews of national policies for education - Lithuania*

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Reviews_nationalpolicies.htm
Original website: *http://www.smm.lt/en/stofedu/docs/edu_reform/OECD_report.pdf*

Start Date: 1998
End Date: 2000

Institution:
Organisation for Economic Co-operation and Development (OECD) <*http://www.oecd.org/home/0,2987,en_2649_201185_1_1_1_1_1,00.html*>. Centre for co-operation with non-members. Directorate for education, employment, labour and social affairs. Education Committee.

Vilnius

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Organisation for Economic Cooperation and Development
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75775 Paris, Cedex 16, France

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Aims McGuinness, NCHEMS, who also served as General Rapporteur

CCNM/DEELSA/ED(2000)66

Organisation for Economic Co-operation and Development (OECD). Centre for co-operation with non-members. Directorate for education, employment, labour and social affairs. Education Committee

Reviews of national policies for education - Lithuania Examinators' report

(Note by the Secretariat)

"In 1998, authorities in Estonia, Latvia and Lithuania asked the OECD to undertake a review of national policies for education. Following the Education Committee's well-established framework, a review team undertook a mission in October 1999 and, on the basis of background material prepared by the Lithuanian authorities and information supplied in meetings in the course of the two-week review mission, completed the attached report. The reviewers' report provides an overview of the entire system of Lithuanian education. It identifies key directions for the reinforcement of the reforms in the light of challenges faced by officials, communities, enterprises, educators, parents and students under very dynamic conditions. Each of the sector chapters (compulsory and general education, vocational education and training, and higher education) offers specific recommendations. The final chapter on strategic development brings together in the form of a synthesis those specific recommendations and sets out how policies can and should be addressed system-wide, linked to priority issues of access and equity, quality, efficiency and governance.
[...]
This review was undertaken under the aegis of the OECD Centre for Co-operation with Non Members (CCNM).
The Education Committee is invited to:
i) COMMENT on the findings, conclusions and recommendations of the review team, in the course of the its special session convened in Helsinki on 26 and 27 June 2000;
ii) RECOMMEND that this document be revised to take into account the main ideas expressed during its special session and be published under the responsibility of the Secretary-General;
iii) DECIDE that, following this discussion, the Lithuanian authorities be invited to report on actions taken towards the implementation of the recommendations;
iv) AGREE that the results of this special session be reported to the Education Committee at its next regular session, 15-17 November 2000." (p. 2)

CHAPTER 3 - CURRICULUM STANDARDS AND ASSESSMENT IN GENERAL EDUCATION
Curriculum policy
"217. Lithuania's changing society requires from its citizens new skills and a re-definition of the concept of what constitutes 'an educated citizen': a ***self-motivated person with the ability to think, solve problems, and use higher-order intellectual skills to process information and make informed decisions.***" (p. 53)

School libraries, information literacy and reading promotion initiatives in Spain

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/Merloreport.htm*
Original website: *http://eprints.rclis.org/archive/00006836/01/Merlo_IASL.pdf*

Date: 7 July 2006

Institutions:

- International Association of School Librarianship <*http://www.iasl-slo.org/iaslinfo.html*>
  Erie, PA (USA)
- Salamanca University. <*http://www.usal.es/web-usal/Ingles/index.html*>. Department of Library and Information Science
  Salamanca, Spain
- Fundación Germán Sánchez Ruipérez <*http://www.fundaciongsr.es/penaranda/default.htm*>
  Peñaranda de Bracamonte
  Salamanca, Spain

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School libraries, information literacy and reading promotion initiatives in Spain

The report was presented at **The 2006 IASL Conference: Reading, knowing, doing. The multiple faces of literacy - Lisbon, Portugal, 3-7 July.**
In particular, it was discussed **on 7 July 2006**, in the **session** dedicated to the theme: **Literacy and multi-literacies.**

The report also includes (p. 5-7) **the complete translation into English of the Toledo Declaration** (*Libraries for lifelong learning: Toledo Declaration on information literacy*), an important policy document for the IL development in Spain which was approved on **3 February 2006 in Toledo** and was **originally written in Spanish** (*Bibliotecas por el aprendizaje permanente: Declaración de Toledo sobre la alfabetización informacional - Alfin* - see p. 167-169).

Abstract
School libraries in Spain have evolved very quickly in recent years. The educational authorities have been approving school libraries development policies, and this has greatly improved the situation of these libraries in Spain.
This paper discusses **three different aspects of school libraries in Spain**: their current situation, information literacy activities, and plans to promote reading.
First, **the current situation of school libraries in Spain** is discussed, based on different types of data relating to these libraries.
Second, **the information literacy initiatives** that are being implemented in Spain is analysed.
Finally, **the different plans approved in Spain to promote reading** are studied.

The Learning Resource Centre - CRAI. The new model of university library

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/LRC_CRAI.htm*
Original website: *http://www.edullab.org/pcrai/documentos/nuevo_modelo_de_BU.pdf* (in Spanish)

Institution:
Technical University of Catalonia (UPC) <*http://upc.edu/*>.
Library and information Services <*http://bibliotecnica.upc.edu/*>

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The Learning Resource Centre - CRAI. The new model of university library

1. The paper's goal

This paper aims at presenting and discussing **a new model of university library**, in order to meet the university's current and future needs.
The library, up to now a support service for university, has to transform itself into **a key strategic service** to help students and teachers access, manage and handle information in the new "knowledge age".
The library's image, up to now conservative and not much fond of changes, transforms itself, through this challenge, into **an innovation peak in the university policy**.
Therefore **the University Library becomes a LRC - Learning Resource Centre, a CRAI in Spanish.**
In this paper the author widens and develops the idea of LRC, proposing a new library model where the centre is not the object 'hook', but the subject, i.e. users, teachers and students, and the key activity is the learning process.

2. The new challenges of higher education in the knowledge age

2.1 From teaching to learning

The new educational paradigm - where the student is the centre of the education system - shifts from the teacher-centred university to the university which will promote student learning. Its main issues are:

- **Change in teaching contents** - From teaching based on lists of topics and rigid courses to teaching based on problem solving, individual cases and collaborative work among students. Teamwork will strengthen a greater need for information searching and other documental sources. **Students' information skills will be essential for promoting this kind of learning.**
- **Change in the communication of teaching** - ICTs will enhance communication between teachers and students, increase the amount of and access to information and documentation and cause a constant change in the learning rhythm. The student will manage his own educational project.
- **Change in the roles** - Teacher becomes for students an advisor, a coach, a consultant, a guide of the educational process. He will be accompanied by other education agents: librarians, IT-technicians, educationalists, creatives, managers, etc.
- **Change in the physical spaces** - From a closed classroom, with fixed timetable and equipment, to a virtual learning environment, a virtual classroom completed with laboratories, seminars, external companies, research areas, meeting and discussion rooms. Within this framework, the LRC - CRAI will be the new classroom par excellence.

2.2 Information and documentation from the paper support to the digital one

2.3 From the classical library to the Learning and Research Resource Centre (LRRC) - CRAI

3. The Learning and Research Resource Centre (LRRC) - CRAI

3.1 Among the **strategic objectives** there is the following one:

- the LRRC has to provide students with a **total learning experience** through interaction with books, people and technology. It must be equipped with different study spaces both for

individuals and groups, in order to carry out training sessions, problem solving activities, case studies, project presentations, etc. All the reading stations must have access to the net.

3.2 Integration of spaces and services - library services

The current library services are wide ranging and different to meet different users' needs.

Among **the basic services for learning targeted at teachers and students involved in teaching,** esp. first cycle students, there are:

- User education on electronic tools providing access to information: tailored training or for groups;
- Self-learning service: how to manage, present and defend your papers, works and projects.

Among **the services for research targeted at teachers, students involved in teaching and research projects, second and third cycle students, lifelong learning students,** there are:

- User education on electronic tools providing access to information: tailored training or for groups;
- Specialised training on exploitation of documental databases;
- Training on how to develop and publish a project or a scientific work.

Among **the library digital services targeted at all virtual users,** there is:

- Training on advanced Internet searching.

4. Organization and financing of the LRRC-CRAI

5. Advantages of the LRRC-CRAI

6. The LRRC-CRAI in Catalan public libraries

7. Conclusions

The LRRC-CRAI is the new model of university library ready to face the current and future shifts and challenges of higher education. It can be a significant lever for the university development within the Higher Education European Space before 2010.

Research projects

The multimedia school library

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/austria/multimedia_project.htm*
Original website: *http://www.bmbwk.gv.at/schulen/service/bibl/multisbibl.xml* (in German)

Institution:
Federal Ministry for Education, Science and Culture (BMBWK).
From March 2007 Federal Ministry for Education, the Arts and Culture (BMUKK)
<http://www.bmukk.gv.at/index.xm>

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im Auftrag des bm:bwk
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Werner Schöggl (Project co-ordination)
Service centre for school libraries - AHS Vienna
Pädagogisches Institut der Stadt Wien
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Tel.: 43-1/ 523 62 22 - 93278
Fax: 43-1/523 62 22 99 93 210

Project: the multimedia school library

The model of the "Central school library in secondary schools with the collaboration of students" was elaborated more than 20 years ago.
The Federal Ministry for Education, Science and Culture has appointed a working group of senior school librarians to support scientifically the further development of the model for the "**Multimedia school library in secondary schools with the collaboration of students**".
Support and instructions for setting up a multimedia school library were offered in the final report *The multimedia school library* (see p. 13-15).

Results

The work with the project schools has shown that **the multimedia school library plays a crucial role in learning and teaching in the information society.**

Examples are the following:

- **Teaching and practical training of competencies for key qualifications such as information literacy, media literacy, reading literacy, methodical skill, self-management, team work** etc.,
- Knowledge "turn table" through daily sharing of experiences and documentation of experiences,
- Support and discussion on excessive demands and failures,
- Social compensation function through the offer of an infrastructure professionally established and supervised for teaching and learning through new media also for socially disadvantaged students,
- Contribution to promoting an overall good climate at school through a pleasant space and a competent, open and friendly support.

Requirements

- School librarians well skilled and trained and also familiar with new media,
- Sufficiently long opening hours,
- Work in co-operation with school management, colleagues, students and parents,
- An adequate technological infrastructure, whose regular updating is assured.

The Denmark's Electronic Research Library (DEFF)

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Deff.htm*
Original website: *http://www.deff.dk/*

Start Date: 1998-

Institution:
Danish National Library Authority <*http://www.bs.dk/content.aspx?itemguid={78D8DBBC-4C50-488A-BADD-15AAF00C32E9}*> in cooperation with the Ministry of Culture <*http://www.kum.dk/sw827.asp*>, Ministry of Science, Technology and Innovation <*http://videnskabsministeriet.dk/site/frontpage*>, Ministry of Education <*http://eng.uvm.dk/*>

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Contact person:
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The Denmark's Electronic Research Library (DEFF)

The Denmark's Electronic Research Library (DEFF) is based on cooperation between the **Ministry of Culture**, the **Ministry of Education** and the **Ministry of Science, Technology and Innovation**.
The project is headed by a steering group with the **Danish National Library Authority** acting as the secretariat.
It is a cooperative venture of several research libraries.
The DEFF embraces a number of projects and progressive assignments within IT, research, education and library development. The overall aim of these activities is **to improve the application of IT with a view to supporting research and education**.
The **six DEFF programme areas** are:

- **User facilities**
- **E-learning**
- E -publishing
- Licenses
- Portals
- System architecture.

Various projects are aimed at developing new tools and methods for further development of the libraries' service to the user as well as tools which support the end user's handling of information resources.
The focus is on **e-learning, information literacy and SBIGs**.

Objective

The main objective of the project is **to support Danish research and education** by strengthening the development of the Danish research libraries and creating a coherent and simple access to the information resources of these libraries.
DEFF – information supply to Danish research and education
DEFF is a **collaborative organisation** which **develops information supply to (and from) Danish research and education**.

Target groups

Researchers, lecturers and **students** at **universities, institutions of higher education** and **research institutions** within the public sector.

The DEFF and the Danish National Library Authority

- **make available digital learning resources via the DEFF-portal**, a directory with access to the libraries' own homepages, catalogues of the libraries' holdings, electronic journals, digital material databases, and subject-based link collections, and by developing subject gateways;
- **provide grants to a number of projects that develop new forms of user education and support.**

COMPLETED PROJECTS

- **FlexDef – integration of DEF in the net education project Flexnet**
- **MILE (Model for Information Literacy Education)** (see p. 211-212)
- **Problem-based teaching of advanced information and literature search – Godin tutorial**

- **SWIM (Streaming Webbased Information Modules)** (see p. 213-215)
- **User Education Community – an option for the users of the business economics subject gateway, BIZ*I*Gate** (in Danish)
- **User satisfaction in the electronic libraries** (in Danish)

ONGOING PROJECTS

- **The library as an active learning partner**
- **E-support tool for information literacy** (see p. 216-217)
- **Learning Objects Web** (see p. 218-219)

DEFF (Denmark's Electronic Research Library) overviews and reports

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Deff2.htm*
Original website: *http://www.deff.dk/content.aspx?catguid={B90F1BDF-E216-47E0-959F-42938B92C53C}*

Start Date: 1998-

Institution:
Danish National Library Authority <*http://www.bs.dk/content.aspx?itemguid={78D8DBBC-4C50-488A-BADD-15AAF00C32E9}*> in cooperation with the Ministry of Culture <*http://www.kum.dk/sw827.asp*>, Ministry of Science, Technology and Innovation <*http://videnskabsministeriet.dk/site/frontpage*>, Ministry of Education <*http://eng.uvm.dk/*>

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DEFF (Denmark's Electronic Research Library) overviews and reports

1. Denmark's Electronic Research Library 1998-2003

2. Strategy for Denmark's Electronic Research Library: strategy and objectives 2004-2005

3. DEFF annual report 2004

DEFF's activities in 2004

Within **the six action lines**, many activities have been carried out by the programme committees.

It must be stressed that the **focus on the user' interaction with the digital library** has also been dominating the work in the **User facilities group**. The programme committee has concentrated especially on usability, virtual reference services, **information competency** and user questionnaires.

User facilities

*"A cooperation between **development of the end user's information competency** will be established and **services** developed which **ensure that the end user can get guidance as well as instruction in information search via the Internet."***

The programme committee for User facilities presented its first action plan to the DEF steering committee in 2004. In continuation of the DEF vision it states that the committee will *"further the end users' access to the research libraries' information resources and remove the barriers that restrict this access"*. The aim is to *"inspire and initiate projects which will provide research library staff with tools, knowledge and qualifications to develop the libraries' utility effect in relation to the patrons."*

Development of user information competences

The committee has also in this field given input to collaboration on starting new projects, and committee member Niels Jørgen Blåbjerg has introduced **a project on remake of the interactive information competence software SWIM to the programme area for e-learning.**

Initiatives on library instruction in information competences has also been discussed, with a view to an **upgrading of instructors** and the committee has subsequently approached the **Royal School of Library and Information Science** about this.

Two action lines

1. concentrated on reporting on integration of DEF's digital services and resources directly in e-learning portals;
2. directed at the **development of models for involving research library resources – particularly library competences – directly in teaching programmes**, often (in library circles) referred to as **models for development of students' competences.**

Projects

A number of projects were granted financial **support from DEF in November 2004 and have been running all through 2005.** Among them, there are the following ones:

1. A **further development of SWIM (Streaming Webbased Information Modules)** which is run by Aalborg University Library. The new version of SWIM (named SWIM, vers. 2) is in English and composed by a number of **learning objects**.
2. Under IT-vest an integrated IT-teaching portal was launched, called DIGITEV. The project utilises existing DEF resources by bringing them closer to the users.

4. DEFF annual report 2006

DEFF 2006

The programme areas

"***Information literacy was a significant action area*** *and a number of projects dealt with various different aspects of the concept. The work involved is coordinated via the* Library as an active learning partner *project and resulted in a number of communication activities in the form of reports and a feature day in the Autumn.*
In addition to the more general issues related to information literacy and the library's role in the learning process, a number of projects concentrated on the practical integration of information resources into the e-learning process (DELA, Edumedia and Digitev) and provided technical support in connection with the acquisition of information literacy (the Learning objects web *and* E-support tools for information literacy projects*)*."

DEFF 2003-2006

Introduction

Within **the results and dissemination**, it is stressed that "*there is a need to improve action on "library advocacy"; not in order to promote institutions and funding, but in order to ensure reasonable promotion of education and research. The issues are open access, digital Danish teaching aids, research dissemination,* ***information literacy and lifelong learning****, but it is also a question of more specific activities such as integrated search, alumni services, research statistics, support of e-science and digitalisation*".

E-learning

"*The digital library shall be a central player in the modern world of education and information dissemination in which the quantities of non-structured information from the net exist as a growing source of knowledge. Based on this, it shall be easy for both teaching staff and students to construct meaningful and personal complexes of information which can be shared in an uncomplicated fashion and made available to others.*
[...] *The programme area was established in the summer of 2003 and set the stage for libraries, together with the learning environments, to create models for the development of e-learning.*
[...] *The group consisted of staff from the research libraries and a number of representatives from the universities' e-learning environments. This combination was to ensure both dialogue between the two parties, library and education...*"

Action areas

Between 2004 and 2006, the e-learning programme group had worked on different action areas, including many specific initiatives and projects:
- Content production
- **Information competence**
- Copyrights
- Access – a common access key

- Personal portals
- Cross disciplinary e-learning courses.

"All action areas comprise fields of development which point at access to, and management of, information in virtual learning environments... 'Streaming video' has been studied as a medium and has been the subject of a project, as has ***the ability of 'information competence' to manage and work with information in modern e-based learning environments in which the student, to a large extent, works independently.*** *All projects have aimed for results which could add value to the knowledge production of the educational institutions."*

Perspectives for the future

*"****E-learning*** *as a concept has always been a subject of debate in the programme group. The concept contains* ***both a technological and an educational dimension*** *and the issue was the weighting of each dimension. Is e-learning purely technology? Or... should it always be seen in a cultural, social and academic/educational context? There were two aspects that were of interest to the programme group:*

- ***E-learning as a technical discipline*** *in which search facilities and the development of technologies support the communication between, and integration of, various platforms. The focus is on the technology here and the library's role is one of system developer.*

- ***E-learning as an educational discipline*** *in which* ***the development of new ways in which to assimilate information competence are seen in relation to e-learning's educational dimension."***

In the opinion of the e-learning programme group, both aspects of e-learning are important and **a cross-disciplinary approach** is necessary. *"Information competence should be included as a significant focus area in a new strategy for DEFF... the focus should be broadened in relation to traditional e-learning and... libraries... could focus more on the way in which users work with the material at hand".*

Action areas - Usabilities studies

These studies *"showed that users had great difficulty locating full-text articles via the libraries' search facilities. Users basically expect to be able to conduct a search at article level and usually give up if they have to use the traditionally recommended search method. This requires the user to familiarise himself with... an incalculable number of bibliographic databases with varying search interfaces.*

This explains why users are increasingly avoiding the libraries' local search facilities when they search for information. If they use the library search facilities, the results are often poorer as these facilities require insight and frequent use".

Perspectives for the future

*"****Information competence*** *and increased user knowledge, with regard to the localisation, evaluation and application of information, are fields which the user facilities group expect to become focus areas in the years to come, perhaps in close collaboration with the teaching staff at educational institutions. One action area could be* ***the reassessment of methods for instructing users****, perhaps taking into account the fact that* ***users are increasingly conducting their information searches outside, and independently of, the libraries****. The collaboration with teaching staff should help students understand that they* ***must professionalise the information search process*** *in order to be prepared for their studies."*

Projects

Among the projects funded by DEFF between 2003 and 2006 there are the following:

E-learning

- Libraries as an active learning partner
- E-support tool for information literacy - see p. 216-217
- Learning objects web - see p. 218-219
- Problem-based teaching of advanced information and literature search - Godin tutorial.

MILE - Model for Information Literacy Education

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/web_based_mile.htm*
Original website: *http://mile.auc.dk/*

Start Date: 1999
End Date: 2001

Institution:
Aalborg University Library <*http://www.aub.aau.dk/portal/js_pane/forside/particle/166*>

Aalborg

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Contact persons:
Elisabeth Arkin
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Niels Jørgen Blåbierg
Tel.: 9635 9368

MILE - Model for Information Literacy Education

MILE developed **a multimedia programme with an innovative design**, consisting of **a tutorial** divided into modules that could be used independently. These heterogeneous modules were designed and developed testing various methods of instruction, such as animated demonstrations, various types of exercises, narrative and interactive film sequences, as well as testing different types of multimedia effects such as music and speech. Library users differ in terms of learning styles and pace: thus, the programme takes the need of the individual user as its point of departure.
This project aims at creating and testing a model for user instruction at **Aalborg University Library** in information literacy based on innovative pedagogy and information and communication technology.

The product of the project is **a tested and evaluated model for an instructional program** which may consist of **a combination of multimedia or web-based just-in-time tutorials**, as well as live instruction integrated in the teaching/learning process.
Results from the pilot study showed that the idea of an interactive multimedia programme seemed especially appealing to the **target group (the students)**.

Reports in Danish are available online.

SWIM - Streaming Webbased Information Modules

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/web_based_swim.htm*
Original website: *http://www.swiminfo.dk/*

Start Date: September 2001
End Date: February 2003

Institution:
Aalborg University Library <*http://www.aub.auc.dk/portal/js_pane/forside/article/166*>

Aalborg

Project partners:
- The Aarhus School of Business Library <*http://www.asb.dk/lib.aspx*>
- The Royal Library <*http://www.kb.dk/index-en.htm*>
- The Roskilde University Library <*http://www.rub.ruc.dk/index_eng.php*>

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Niels Jørgen Blåbjerg
Tel.: 9635 7304

SWIM - Streaming Webbased Information Modules

SWIM - Streaming Web-based Information Modules begins where **MILE** left off in developing a tutorial, which to an even greater extent integrates the formation of information literacy in the student's information retrieval process. The modules from the MILE project have been developed and structured in shorter sequences.

The vision of SWIM

The vision behind the SWIM project is to develop a **web-based multimedia programme** that furthers **the development of students' information literacy skills**. The programme is designed as a contextually relevant, interactive tutorial, which is divided into well-defined modules and integrated in various web environments relevant to library users and teaching environments.

Objectives

- To support students in the acquisition of information literacy skills, particularly when using web-based information resources supported by Denmark's Electronic Research Library. The SWIM group aims to develop an easy to use tutorial consisting of modules that relate to relevant information resources, thus offering the user the possibility of just-in-time learning when using e.g. a specific database.
- To secure the integration and use of those information resources and facilities that can be accessed through the research libraries in the teaching environments of the various educational institutions.

Project organisation

The **Aalborg University Library** is in charge of the SWIM project and its development, but works in collaboration with the **Aarhus School of Business Library, the Royal Library** and **Roskilde University Library** that function as **user test environments**.
The SWIM group at Aalborg University Library has made the necessary pilot studies, worked on product and method development and gathered experiences from the test environments for further development.
A key feature of the product development process **is the involvement of students from Aalborg University for user testing**. Experiences gathered from these tests are in the development of the individual modules. Then follows the implementation of the modules in the user test environments at the Aarhus School of Business Library, the Royal Library and Roskilde University Library. The modules are evaluated by students from the user test environments through user tests developed by Aalborg University Library. A final evaluation of all the user tests has been carried out by Aalborg University Library, and incorporated into the development of the product.

Network

In order to render the project visible, secure exposure, and further the exchange of knowledge and interplay with other projects, the SWIM group has formed a number of attachments to centres and institutions both within and outside Aalborg University.
The plan for the network collaboration is structured in **themes**.
The **network themes** are:
Learning and problem-based learning
E-learning Lab Nordlylland
Learning Lab Aarhus

Learning Lab Denmark
The Centre for the Interdisciplinary Study of Learning (VCL), Aalborg University
Virtual Learning Environments and Learning Methods (The VILL project)
Department of Communication, Aalborg University
Learning and IT
E-learning Lab Nordjylland
Learning Lab Aarhus
Learning Lab Denmark
The Centre for the Interdisciplinary Study of Learning (VCL), Aalborg University
Virtual Learning Environments and Learning Methods (The VILL project)
VR Centre North, Aalborg University
IT Innovation, Aalborg University

Target groups

The product is usable to **a broad circle of students in higher education**, including distance learners. The indirect target group is **the universities' teaching environments**, in connection with curriculum planning and other activities that further the integration of information literacy in the learning process. Furthermore, the target group also **includes a number of different users in various web environments** e.g. The Virtual University of Denmark (DVUNI) and those involved in Denmark's Electronic Research Library.

Results

- A **web-based tutorial** that is stored and distributed via a streaming server at Aalborg University, and that is accessible from the homepages of four research libraries. It is accessible for linking and use from other web environments.
- Integration of SWIM modules in the libraries' web sites.
- Know-how regarding the evaluation of tools on the basis of user tests.
- Better use of DEF-supported licence packages among students.
- Better projects and better equipped candidates with more information literacy skills.

Project plan

Phase 1: September 2001 – April 2002
Phase 2: May 2002 – February 2003

See also:

Best paper:

Niels Jørgen Blaabjerg, *User Centred Information Literacy Education - Application of Multimedia in E-learning and Blended Learning.*

Presented in the session "**Education and Training Systems and Technologies**".
The 3rd International Conference on Education and Information Systems: Technologies and Applications. EISTA 2005
Orlando, Florida (USA), 17 July 2005

This case study presents **the application of multimedia in an e-learning and blended learning product** which aims at **developing students' information literacy**.

E-support tool for information literacy

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/ILesupport.htm
Original website:
http://www.deff.dk/content.aspx?itemguid={5CD4893A-1542-4072-8D08-11BF038FB7D8}

Start Date: April 2006-

Institution:
The Royal Library <*http://www.kb.dk/en/*>

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1016 Copenhagen K
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The Royal Library

E-support tool for information literacy

This project is funded by DEFF.
Its purpose is to develop an **e-support tool in information literacy**.
The tool must illustrate to the student what information literacy is and give tangible advice as to where more inspiration and support can be found and used for the student's further work.
At the same time the tool refers to library services so that the student can seek out and use the most relevant resource.
The e-support tool enables the student to solve his/her own concrete information needs, enhancing the quality of the student's assignments.

Learning Objects Web

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/learningobjectsweb.htm
Original website:
http://www.deff.dk/content.aspx?itemguid={28E644F8-41FE-4A81-AB30-E5781915A0B1}

Start Date: April 2006-

Institution:
Aalborg University Library <*http://www.aub.aau.dk/portal/js_pane/forside/article/166*>

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Learning Objects Web

This project is funded by DEFF.
It aims at providing the possibility of establishing collaboration with international partners **to create a broader dissemination of the SWIM concept** and **to develop the information literacy concept** in terms of **the expansion in the use of ICTs in the teaching process**.
Its purpose is to develop **an English version of SWIM** in cooperation with international partners.

Students on the web

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/master_Aalborg.htm*
Original website: *http://projekter.aau.dk/PDB/projects/Elever_paa_nettet/* (removed in 2007)

Date: 2005

Institution:
Aalborg University. Master in ICT and Learning (MIL) <*http://www.mil.aau.dk/*>

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Authors of the project report:
Lisbet Kühn
Gitte Søgaard

Students on the web

Project by students at Aalborg University - Master in ICT and Learning

Semester: 2. term
Year: 2005

This is one of the projects for the **Master in ICT and learning.**

The Online Master Programme in ICT and Learning is a web based 2-year part-time education that is offered **by Aalborg University** in cooperation with Aarhus University, Copenhagen Business School, The Danish University of Education, and Roskilde University, in order to develop new learning forms **to master all degrees of "the learning society"** and **life-long education.**

The Project
The research involves **students from three different years in a Danish primary school.**
Students solving problems by searching the web are observed in order to obtain an insight in their conceptions of the web and of Google. The data are analysed and some conclusions are reached in three fields: **reading ability**, **conceptions of the Wide World Web** and **ability to perform full text search on the web**. From the evidence offered it appears that **qualified teaching in full text search and alternative reading methods is needed and that this teaching must be introduced in years 3-5.**

The **project report** (111 p.) was available **in Danish only** through **the Digital Project Library**.
The authors are Lisbet Kühn and Gitte Søgaard.

Scribo - A research question and literature search guide

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/denmark/Scribo.htm*
Original website: *http://www.scribo.dk/* (in Danish)

Start Date: 1993
End Date: 2004

Institutions:
- University of Copenhagen. Academic Writing Center, Humanities Department <*http://www.akademiskskrivecenter.hum.ku.dk/*>
- The Royal Library, The National Library and Copenhagen University Library <*http://www.kb.dk/index-en.htm*>

Copenhagen

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Det Humanistiske Fakultet
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Njalsgade 126, lokale 23.5.05, 2300 København S
The Royal Library
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The Royal Library, The National Library and Copenhagen University Library

Scribo - A research question and literature search guide

The design of this software is intended **to support and enhance the development of research questioning, information and literature search and the general process of research paper writing for student in university and college settings.**

Background

Most **university writing** is graded, but there are few opportunities to learn and get acculturated to writing and literature search methods, techniques and strategies. There are only very few writing programs or facilities of any kind, no student tutors, no general writing courses. At Danish universities, there's only individual supervising of paper writing by discipline teachers, generally from 4th semester (BA project) and forth – feedback on drafts. **There is no overall program for Information Literacy.** Instruction to libraries and information search are to varying degrees incorporated into the discipline courses and introduced by discipline teachers below BA level.
This is usually restricted to basic and practical aspects of knowledge of certain material types, concrete resources and local standards. In addition discipline specific and generic - non obligatory and non ETCS giving - courses are offered from institute, faculty and university libraries. Besides the first introduction the knowledge of these courses and attendance is low.

The software Scribo

It is designed to meet **the requirements of the research paper.**
A research paper is defined as **a problem- and source based documentation of a piece of research.**
A majority of research papers are empirical (i.e. contains analysis of data, applying scientific methods and procedures + methodological discussions, small-scale). A minority of research papers are theoretical discussions.
The program consists of the following ***parts:***
1. **research question**, subdivided
2. **information and literature search and strategy part**
3. **connection** of these introductory steps to structuring and enhancing further steps.

There are six ***functions*** in the program:
1. Questions
2. Note pad for drafting
3. Explanations
4. Advice
5. Examples
6. Dictionary.

The software contains **four examples from genuine papers and theses.**

Use and users

The purpose of the program is **to guide the writer from topic to research question and a literature search, and to teach the research paper genre and academic information literacy to users.** It is intended as a preparation for and supplement to the teacher's supervision, not to supplant the work of the teachers, or that of librarians or writing center staff.

It often takes a student 2 – 3 hours to work through the program, topic in hand. The user works by writing, reading and at the end of the program gets 6 choices of export from the program: with/without the program questions, the literature search strategy alone etc.
The software is used widely by university students and others.

Key concepts

The pivotal point of the Scribo software and the research paper is the **research question.**
The specific **information search skills are central** to the inspiration, argumentation for, and coining of a research problems.
The relation between the formulation of research questions and the development of an information and literature search strategy can be seen as **circular.**
Systematism of the field is a phrase used in the program: By that is meant any concepts/theories/ methods used for analysis, discussion etc. in a paper.
Systematisms/ Analytical Tools =
- categories
- concepts
- theories
- methods
- models

used in any discipline.

The underlying concepts of the research paper genre
The Research Paper - five basic questions

1. Your research question: **WHAT is it you are asking?**
2. Academic purpose (and use) of your research: **WHY are you asking that particular question?**
3. Data/material/phenomenon in your research paper: **TO WHAT data etc. are you addressing your question?**
4. Concepts/theories/ methods in your research paper: **WITH which analytical tools are you going to approach your data?**
5. Procedure of your research: **HOW are you going to carry out your research - step by step?**

The genre and the information-and-literature-needs
The underlying understanding behind Scribo's literature search module is that **the information and literature needs for a research paper can be broken down into the following five elements:**

1. **Your research question: WHAT is it you are asking?**
   1 Sources which explicitly treat the problem
   2 Sources with different views of the problem
   3 No sources (confirmed)
2. **Academic purpose (and use) of your research: WHY are you asking that particular question?**
   Field and context literature to lend a purpose to the research
3. **Data/material/phenomenon in your research paper: TO WHAT data etc. are you addressing your question?**
   Primary sources, empirical material (all media), data, information

4. **Concepts/theories/methods in your research paper: WITH which analytical tools are you going to approach your data**
   Theoretical and methodological books/articles
5. **Procedure of your research: HOW are you going to carry out your research - step by step?**
   Similar research for procedures.

Using Scribo as a teaching tool: Large group Scribo tutorials

Scribo is mainly used as an **individual tool on the university intranet.**
Since Autumn 2006 Scribo has also been introduced in newly launched master thesis workshops for social science students. These workshops are planned and marketed in a collaboration between the Copenhagen University Library and the pedagogical Center at the Faculty of Social Sciences.
The Center regularly does a "road show" to all the master thesis students at their institutes in the beginning of each semester.

Lessons learnt from teaching genre and information literacy with Scribo

The program was completely redone in 2004, featuring the two new elements:
1) **information and literature search** and
2) **the four commented examples.**
The literature search module connects a research library's search tutorial to the writer's own ongoing paper, and helps break down the research question into needs for specific kinds of sources, as well as give awareness to the methodological elements in applying and integrating information search and strategy into the paperwork and to the need to know of and how to use different search techniques and resources.
Especially in the humanities, many research questions contain broad and imprecise key words, which are not instrumental for electronic searches and can sometimes be indicative of a too vague and unfocused problem idea. The very existence of the databases and the search engines, the very fact that a search all too easily renders thousands of hits, will prompt the student towards posing narrower questions, in fact researching more small scale and become explicitly aware of their own influence on coining the problem, perspective and possible analytical outcomes – or revert to asking the supervisor or the librarian what books are on their shelves. The terminology open to a writer is shaped by library terminology logic, which may not be identical to the logic of the disciplines in question, nor to the writers.
The librarian mediates what scientific searches demand, and what an information search demands will in its turn shape the way research questions can be posed.
The ever-repeated stance that the elements of a paper (and of Information Literacy) are the same across disciplines is not readily accepted. Several representatives from the natural sciences are interested in Scribo only if it includes examples from their fields.
This embedded and collaborative piece of e-learning presents itself as relevant to the student: many students will acquire skills, knowledge and competencies in Information Literacy that they would not otherwise have had the opportunity for or interest in.
Embedding Information Literacy teaching is founded on strategic as well as pedagogical considerations.
Integration and embeddedness supplies meaning and relevance to Information Literacy.
In Scribo this is done simultaneously: **the literature search is written, learnt and executed simultaneously.**

Pros and cons - what is the point?

Scribo applies very well to social sciences, less so to philosophy or any other discipline where research papers may resemble essays, in that they may not be clearly methodological. **Scribo is best adapted to *analysis* papers.** It is difficult to build into a piece of software such important aspects of teaching writing as rhetorical awareness of specific purposes, formats, themes and audiences.

The goal of all writing development ultimately should be **rhetorical awareness,** rather than a mere allegiance to format and convention.

The intention behind the software Scribo is **to scaffold a process of design of the basic elements of the research paper.** The same type of consideration applyes to **Information Literacy.** Many researchers/teachers know by experience how to find and qualify information and literature, but are not explicitly aware of their own praxis and other methods and techniques. **By giving different examples of how it can be done and illustrating what the information and literature search process necessarily consists of in order to do independent student research, Scribo empowers the student user in a proactive manner, e.g. as opposed to thesis supervision which is in nature generally reactive.**

Therefore, it is possible to teach academic writing, search skills (and other practical and intellectual competencies) **by teaching genre and generic competencies across disciplines and external to the subjects taught.**

The research paper is about using systematisms of a field to conduct an inquiry, a piece of research of the student's own, and it is a training in employing methods, concepts and theories as well as teaching the students information search skills and a sense of academic production of knowledge and academic integrity. **These are general academic competencies.**

Teaching them separately (in supplement to subject integrated) also gives focus to the field of knowledge, e.g. research question formulation, project planning and information literacy. This makes it possible to use and develop a language to speak of the specific skills and competencies that in turn helps students to be more aware of what is expected of them beyond the discipline specific curriculum.

In order to set further focus on the requirements and expectations to the students, **Academic Writing Center and Copenhagen University Library have launched a collaborative student paper contest for the Faculty of Humanities, Autumn 2006: "In Search of Excellence",** where prices are given to the best paper in terms of writing/communicating, analytical and information competencies.

Rich and useful information **about this software and its application to the general process of research paper writing** is available **in English** in the following paper, presented at **Creating Knowledge IV - Empowering the Student through Cross-Institutional Collaboration. International conference at The Royal Library and University of Copenhagen. Copenhagen, 16-18 August 2006:**

Lotte Rienecker - Tina Buchtrup Pipa, *Scribo: A Tool for Proactive Collaborative Teaching.*

Development of information literacy in European higher open and distance learning

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/estonia/Virkusthesis.htm*
Original website: *http://www.hlss.mmu.ac.uk/dic/people/people.html* (removed in 2006)

Start Date: December 2001
End Date: December 2005

Institution:
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Sirje Virkus, *Development of information literacy in European higher open and distance learning.* PhD Thesis

The aim of this study is to investigate the ways **how information literacy is being developed within European higher open and distance (ODL) institutions.**
A **mixed-method research strategy** which includes **a survey** and **a multiple case study approach** has been chosen.

Curriculum Plan for Information Literacy: a Joint Virtual University Project of the Finnish University Libraries 2004-2006

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/curriculum.htm*
Original website: *http://www.helsinki.fi/infolukutaito/english/index.htm*

Start Date: March 2004
End Date: December 2006

Institution:
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Curriculum Plan for Information Literacy: a Joint Virtual University Project of the Finnish University Libraries 2004-2006

Finnish university libraries have launched this **national project for the creation of an information literacy curriculum**. It is coordinated by the **University of Helsinki** and receives funding from the Ministry of Education from 2004 to 2006.
The aim of the project is to identify the central information literacy and management skills students need, draw up a curriculum pian for information literacy, develop online education for information search skills, and create a network among the universities.
Project's primary aim is to enhance integration of information literacy in the academic curriculum. In this context, **information literacy** can be defined as **the ability to search for, locate, evaluate and make use of diverse information sources.**
At the moment the instruction in information literacy provided by university libraries reaches only a part of students and is not coordinated enough. The situation varies by university and discipline.
Information literacy frequently features in the stated strategies of universities, but in practice, the integration of information skills as part of studies requires common standards and financial resources also for the instruction provided by libraries. The universities may decide on the practical implementation of the information literacy curriculum themselves.
The impending changes in the Finnish university curriculum by 2005, in accordance with **the Bologna process**, require universities to make an analysis of their core curriculum components. This process **offers an opportunity to link information literacy more closely and coherently to the subjects taught in universities.**

Moreover, **the challenging task** in the project is **to design the curriculum structure and educational material modules** based on information literacy standards: it includes designing and constructing **a database for the educational materials.**
The main objectives are:

- To ensure that the educational material database is **as comprehensive as possible.** Creating a shared, freely accessible educational material database, requires a shared set of rules to govern the rights to use the educational material. Planning a system for administering the licences for users is also part of the project.
- To assess the compatibility of the educational material database with the national scientific information portal, Nelli.

The **modular structure** of the educational material for the online courses enables the use of individual course modules in the face-to-face and online instruction provided by libraries and different university departments.

In the first project year, **the steering group of the project** drew up **a national recommendation for universities for integrating information literacy into academic studies.**
The *Recommendation for universities for including information literacy competency in the new degree structures* (see p. 232-233) **was sent to the coordinators of the Bologna process** being undertaken in the universities.

A network of library educators

The national project acts as **a network for the universities** and supports the work being done in the university libraries by **developing common tools**, e.g. for the evaluation of information literacy, and by circulating good practices.

In 2004 when the project was started, all the Finnish university libraries were asked to designate their **information literacy contact persons** and accordingly **a mailing list** was created to permit communication between a total of 29 individuals representing 20 different universities.

The role of the contact persons has been to function **as intermediates between the local university level and the national level.** One of their major tasks has been to provide the national project with detailed information about the local information literacy situation in order to create a common knowledge base.

At the beginning of 2005, two *ad hoc* working groups were set up:

- **The pedagogical group** has arranged seminars and meetings where best practices have been shared and has provided pedagogical training for librarians;
- **The IL-assessment group** has focused on developing **a tool for information literacy proficiency assessment** (see p. 234-235).

Rich and useful information about **the project and the various project-related activities** is available **in English** in the following paper, presented at **Creating Knowledge IV - Empowering the Student through Cross-Institutional Collaboration. International conference at The Royal Library and University of Copenhagen. Copenhagen, 16-18 August 2006**:

Arja Juntunen - Anne Lehto - Jarmo Saarti - Johanna Tevaniemi, *Supporting Information Literacy Learning in Finnish Universities – Standards, Projects, Educating Online.*

Recommendation for universities for including information literacy competency in the new degree structures

English outline in EnIL: *http://www.cens.cnr.it/Basili/EnIL/gateway/finland/recommendation.htm*
Original website: *http://www.helsinki.fi/infolukutaito/english/recommendation.pdf*

Date: 7 December 2004

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Recommendation for universities for including information literacy competency in the new degree structures 7-12-2004

The Recommendation – on the basis of the Ministry of Education, ***Development Plan for Education and Research 2003-2008*** (see p. 50-51) – describes **the minimal level of objectives in information literacy**. The integration of the recommended curriculum in the study programmes of all Finnish universities would greatly enhance the comparability of degrees and the transferability of credits from one university to another.

Information literacy curriculum
The purpose of the information literacy curriculum is to define the central elements of information literacy and assist in the development of the contents of courses in information skills.
Objectives: The student will be able to access and use effectively the information he or she needs, which is a prerequisite for learning to learn and completing an academic degree. When leaving the university, the student will have the information competencies required by professional life and lifelong learning.
The objective of the information literacy curriculum is that graduates from the university will meet the ACRL Standards.

Information literacy curriculum: compulsory courses proposed for university students

1. **New students: Basics in information literacy – 1-2 ECTS**
   Level: basic
   Time of courses: initial stage of studies
   Unit responsible for the provision of courses: depending on the university, the faculty or other equivalent unit. The courses will be part of compulsory general studies, e.g. part of ICT studies.
   Practical implementation: libraries.

2. **Bachelor's level studies: Information literacy in intermediate level studies – 1-2 ECTS**
   Level: advanced
   Time of courses: proseminar/Bachelor's thesis seminar
   Unit responsible for the provision of courses: depending on the university, e.g. the student's home department.
   Practical implementation: the module will be compulsory and integrated into the proseminar/Bachelor' thesis seminar; cooperation between the seminar supervisor and the library will be of the utmost importance.

3. **Master's level studies: Information literacy in advanced level studies – 1-2 ECTS**
   Level: advanced and specialised
   Time of courses: Master's thesis seminar or equivalent stage
   Unit responsible for the provision of courses: depending on the university, e.g. the student's home department.
   Practical implementation: the module will be compulsory and integrated into the Master's thesis seminar; cooperation between the seminar supervisor and the library will be of the utmost importance.

Question bank: a joint tool for assessing information literacy skills

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/assessing_ILskills.htm*
Original website: *http://www.ck-iv.dk/papers/JuntunenLehtoSaartiTevaniemi%20Supporting%20information%20literacy%20learning%20.pdf*

Start Date: April 2005-

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Question bank: a joint tool for assessing information literacy skills

On the initiative of the **IL-assessment group**, a project to create **a joint question bank for information literacy proficiency assessment was launched in April 2005.**
It is targeted at **university students at all levels, from first year to Master's level.**
Accordingly the group participated in creating a large bank of information literacy assessment multiple-choice questions by commenting and providing feedback to the planning officer of the project.
One of the challenges in the project is **how to create common material for all universities and all disciplines.** In fact, since the information literacy demands within separate disciplines and at different stages of studies vary greatly, one single proficiency test with the same contents is insufficient.
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.

In the question bank, **questions are divided into four categories:**
I Defining the topic
II Selecting information topics
III Information retrieval: planning and executing information searches
IV Evaluating and using information (sources).

Questions are also divided into **three levels of difficulty** in accordance with the **National Information Literacy Recommendation** (see p. 232-233):
I New students: Basics in IL
II Bachelor's level studies: IL in intermediate level studies
III Master's level studies: IL in advanced level studies.

Information literacy proficiency tests can be used
- to gather information about the students' skill levels to develop how it can be better taught;
- for the measurement of the baseline level of a student's information seeking skills, in order to direct students to those teaching groups which correspond to their skill levels.

When designing the realization of the proficiency test, the students' studies must be taken into consideration as a whole so that the test will not appear to be isolated from their main interests.
It is also important that students receive feedback after having taken the test, to be provided with the right answers to the questions and to know how well they performed.
The feedback can include a recommendation to participate in sessions arranged by the library in those aspects where there is a need for support.
Rich and useful information about **the project** is available **in English** in the following paper, presented **at Creating Knowledge IV - Empowering the Student through Cross-Institutional Collaboration. International conference at The Royal Library and University of Copenhagen. Copenhagen, 16-18 August 2006**:

Arja Juntunen - Anne Lehto - Jarmo Saarti - Johanna Tevaniemi, *Supporting Information Literacy Learning in Finnish Universities – Standards, Projects, Educating Online* (p. 8-9).

Web Searching, Information Literacy and Learning – Web-SeaL

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Web_Seal.htm*
Original website: *https://www11.uta.fi/blog/webseal/index.php/web-seal-description/*

Start Date: January 2006
EndDate: December 2009

Institution:
University of Tampere/Department of Information Studies (UTA/Inf)
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University of Tampere/Department of Education (UTA/Edu) <*http://www.uta.fi/laitokset/kasvlait/*>

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Web Searching, Information Literacy and Learning – Web-SeaL

The project is **coordinated by the University of Tampere's Department of Information Studies** and the research is conducted in the following sites: University of Tampere/Department of Information Studies, University of Tampere/Department of Education, and University of Lapland/Faculty of Education, Centre for Media Pedagogy.

The objective of this project, funded by the Academy of Finland, is to clarify **the interplay of information literacy and learning in the Web-dominated information environment.** The **long-term aim** of the project is to intensify **the flowering of information literacy as a part of basic education.** This is seen as a necessary step to improve the readiness of learners to meet the challenges of vocational and academic education. The work is founded on **cooperation between researchers in information studies and educational sciences** to puzzle out the multidisciplinary research problem.
The project focuses on **two main research questions in two educational contexts, comprehensive schools and higher education:**

1. How do learners search, evaluate and use information in essay and project presentation type of learning tasks?
2. How information literacy can be improved by integrating IL instruction into the curriculum?

The **interdisciplinary approach** to reveal the connections between information searching, knowledge acquisition and learning is expected to make a major **theoretical contribution** by

a) drawing a more clearer picture of the role of information searching in the learner's knowledge acquisition,
b) explicating the conception of information literacy in knowledge acquisition and learning, and
c) developing a theoretical framework for information literacy instruction as an integrated part of a learning process.

The empirical results of the project are applicable in the **design of learning environments for information literacy at various levels of education.**
The results may be applied to enhance the role of information literacy in teachers' education.
The project will introduce **practical models for integrating information searching into learning tasks**, especially **in open learning environments and distance learning.**
For more information about the **project**, its **research plan, background, objectives, methods, results, researchers** and **resources** see **the Research plan** at ***http://www.info.uta.fi/tutkimus/WebSeal/Research_plan.pdf*** (freely available online until Spring 2006 - removed in Summer 2006).

Within the project there are the following **working groups focussing on two main research themes** (see p. 238):
Team A - Searching and learning behaviour
Team B - Information literacy and learning

For other information about the project see also: *http://www.ulapland.fi/?deptid=22056.*

Web-SeaL - Team A: Searching and learning behaviour

Within Web-SeaL, a research project funded by the Academy of Finland for the years 2006-2009, there is this **working group, focussing on learners' searching and learning behaviour.**

The **core research questions** are:

a) How do learners recognize and specify information needs, select information channels and environments, and search?
b) How learners assess different types of documents and sources of information?
c) How learners interpret and use information found in different media forms (e.g., texts, images)?
d) How the way of introducing the assignment and the instructional methods used affect on user behaviour in these processes?
e) How the use of mobile tools affect on information searching, information use and learning experiences?
f) How the differences in searching and using information are related to learning styles and outcomes?

Web-SeaL - Team B: Information literacy and learning

Within Web-SeaL, a research project funded by the Academy of Finland for the years 2006-2009, there is this **working group, focussing on information literacy and learning.**

The **core research questions** are:

a) How information literacy can be improved by integrating IL instruction into the curriculum?
b) What is the role of IL instruction in self-directed learning and knowledge acquisition tasks?
c) What are appropriate ways of integration to support learners in IL learning processes?
d) What are learning experiences, processes and outcomes in integrated IL instruction?
e) How problem-based learning integrates information literacy to the learning process?
f) How specific pedagogical solutions (e.g. producing digital videos as PBL cycle) support meaningful learning of information literacy?

Further information

Web Searching, Information Literacy and Learning (Web-SeaL)
Research project, funded by the Academy of Finland, 2006-2009.
The objective of the project is to clarify the interplay of information literacy and learning in the Web-dominated information environment.

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Towards meaningful learning of Information Literacy through a PBL course on educational digital video production

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/IL_PBL_video.htm*
Original website: *http://www.ulapland.fi/?deptid=22056*

Institution:
University of Lapland. Faculty of Education. Centre for Media Pedagogy (CMP)
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Towards meaningful learning of Information Literacy through a PBL course on educational digital video production

The **Centre for Media Pedagogy** at the Faculty of Education participates in the **Web-SeaL project** (see p. 236-238) by exploring the following **research questions** of the project:

a) **How problem-based learning integrates information literacy to the learning process?**

b) **How specific pedagogical solutions** (e.g. learning to produce digital videos as a problem-based learning cycle) **support meaningful learning of information literacy?**

The research is part of a a multi-phase design-based research process of designing, implementing, and refining a problem-based learning (PBL) course, "Supporting Meaningful Learning through Producing and Using Digital Videos", on educational digital video (DV) production for the Faculty of Education's **Media Education curriculum.**
A special feature of the course is that students will produce educational DVs for the teachers of the Faculty of Education to be used as their course material. Therefore, the research will also implement and test **a new model of educational DV production** for the faculty.
During the Web-SeaL project the " Supporting Meaningful Learning through Producing and Using Digital Videos" course has been piloted on the Fall of 2006.
Students learn to produce educational DV clips. They are responsible for the whole production process, which is supported by four PBL-cycles. Students' independent knowledge acquisition is situated between the tutorials, and during it students search for information from various sources, e.g. the Web, workplaces and workshops.
The research explores **how the realization of the PBL-cycles contributes to students' information literacy**.
Enhanced information literacy is also one of the expected outcomes of the learning process. The DV production process is a challenging task for the students from the knowledge acquisition point of view, since most of the students have no prior experience of educational DV production.
In addition, the process requires developing knowledge and skills in multiple domains besides media pedagogy such as dramaturgy, video expression, video production, copyright laws and regulations, and journalism. The process relies heavily on students' independent knowledge acquisition, which is situated between the PBL tutorials.

The **research focuses on the following questions**:

- Do the PBL tutorials support the independent, multiple-domain related knowledge acquisition, that educational DV production requires?
- How is the information acquired during the independent knowledge acquisition stage collaboratively evaluated and negotiated, i.e. constructed into a shared knowledge in the tutorial sessions?

Rich and useful information about this action research case study is available in the following paper:
Hakkarainen, P., ***Designing and producing digital videos as a problem-based learning cycle to support meaningful learning.***
In J. Multisilta - H. Haaparanta (eds.), *Proceedings of the Workshop on Human Centered Technology HCT06* (p. 4-13). *June 11–13, 2006, Pori, Finland.* Tampere University of Technology, Pori. Publication 6, 2006.

InfoLit, Information Literacy Competency project

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Infolit.htm*
Original website: *http://learningcentre.tritonia.fi/projects/infolit.htm* (removed in 2006)

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InfoLit, Information Literacy Competency project

Information Literacy Competency is a group of skills which help to identify the need for information, to search and localize information and evaluate and use the information critically and ethically right.
The standards of controlling the information literacy competency include 5 know-how goals and 22 achievement indicators which enable the measurement of skills (Cf.: ACRL Information Literacy Competency Standards for Higher Education).

The InfoLit project of the Tritonia Learning Centre aims **at clarifying the already existing information literacy education and producing educational material and teaching for lacking fields.** This education is aimed to be part of the new system of degrees and curricula.

The fields of the Information Literacy Competency are:
- **learning and planning of the studies**
- **information search I and II**
- **knowing information technology.**

Academic Information Skills

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Academic.htm*
Original website: *http://www.opiskelijakirjasto.lib.helsinki.fi/hankkeet/eng/info/index.htm*
(closed in late 2005)

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Academic Information Skills

Academic Information Skills is a **joint project of the Undergraduate Library, Helsinki University Library** and Faculty Libraries of Theology, Law, Arts, Pedagogy and Social Sciences.

It has produced an **Internet learning environment** that spans **from basic steps of library use to field-specific information retrieval techniques**. The learning environment can be exploited as an integrated part of subject tuition, in **information skills courses** given by libraries, as well as in **self-access studies**.

The Undergraduate Library takes charge of designing first levels of the environment, common to students of all faculties. A special module in English is geared for international students. Tuition given by library to first-year students and other patrons is remodelled accordingly.

In the project, questions of **crediting information skill studies** and **librarians' pedagogical skills** are specially attended to.

The Undergraduate Library works together with the University of Berkeley, US, for advancement of user research, and for harmonizing the objectives of information retrieval training.

TieDot - Creating web-based IR courses for Finnish universities

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/TieDot.htm*
Original website: *http://www.uku.fi/kirjasto/TieDot/* (only in Finnish)

Start Date: 2002
End Date: 2004

Institution:
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TieDot - Creating web-based IR courses for Finnish universities

Seven universities (Universities of Mid- and Northern Finland) participate in the project, and it is co-ordinated by the **Kuopio University Library**. The project is part of the services of the Finnish Virtual University.

The aim of the project is **to give students information retrieval skills** for their working life and for lifelong learning, **to increase the skills of the library staff in web-based teaching**, to develop a working formula for **co-operation between universities in teaching information retrieval**, and to make more compact the collaboration between institution libraries. As part of the project, a study, "The learning materials for information retrieval of the universities on the web", has been done.
The project has produced **field-specific information retrieval learning kits suitable for ali represented universities**. In developing the **web-based teaching of information management** the project strives towards pedagogically sound, interactive solutions. The staff of the libraries are taught how to operate the learning platforms and educated in web-pedagogy.
There were **three objectives of the project**:
1. **to create the actual courses**;
2. **to build networks between libraries** involved and
3. **to promote the distribution** of the completed work.

A course created by one university library can be transferred or taken into use in another library and in this process an agreement system was established. The agreements stipulated that it would be possible to adapt the course to one's own requirements.
The TieDot project gave birth to an **active network with its annual conferences**.
The distance education courses that have been made in the project have also been **estimated from pedagogical and technical points of view**. This evaluation was extremely important to the creators of these courses.

See:
- **Kaisa Sinikara, *Information literacy and learning resource centres supporting quality and efficiency of learning. Some projects of Finnish universities.*** In: ***Information literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union*, edited by Carla Basili. Roma (Italy) : CNR, 2003, p. 63.**
- **Arja Juntunen - Anne Lehto - Jarmo Saarti - Johanna Tevaniemi, *Supporting Information Literacy Learning in Finnish Universities – Standards, Projects, Educating Online* (p. 17-19).** Paper presented at **Creating Knowledge IV - Empowering the Student through Cross-Institutional Collaboration. International conference at The Royal Library and University of Copenhagen. Copenhagen, 16-18 August 2006.**

Verkosto-Vatti - An academic study skills course for multi-university use

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Verkosto.htm*
Original website: *http://www.kotu.oulu.fi/avoin/vervatti.htm* (in Finnish)

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Verkosto-Vatti - An academic study skills course for multi-university use

The **Verkosto-Vatti project** adapts **academic study skills course for multi-university use.**
A number of Finnish universities co-operate to provide other universities with a course that they themselves found useful. Originally, three universities developed **a joint course on academic study skills.** First, they used it as an introductory course in their own curriculum. This co-operation helped them realize that introductory courses can be efficiently provided over the web, rather than each university having to develop the course contents and provide the course itself. They were later joined by two more universities, and **since 2003**, the course and its format have been **developed as a virtual university project by a network of five universities.**
The network is co-ordinated by the **University of Oulu** and includes other four participants: the **University of Vaasa**, the **University of Lapland**, the **Lappeenranta University of Technology** and the **University of Industrial Arts, Helsinki**. These universities are very different, including small and large ones and multidisciplinary and single-discipline universities.
The **course on academic study skills (2 study week credits)** was originally developed at the university of Oulu in co-operation between different units. The course has been available through the Open University since 1998, and it has always been **purely online**, with non classroom teaching. **All the material is available on the web**, and **students are supported by trained tutors in three different subject areas** for the entire two-week duration of the course.
The course helps students develop their own **learning skills**, including **a sense of belonging to the scientific community, systematic work methods, an active and collaborative attitude to learning, group work skills, information search skills, the evaluation and application of information, learning strategies and styles, and reading and writing techniques.** Students also learn about **e-learning and the use of a web-based learning environment.**

Aims and challenges

During 2005 and 2006, the project aims at:

- Updating and complementing the study material to make it as suitable as possible for students at very different kinds of universities;
- Expanding the network and opening the versatile course material for general use;
- Offering study material and the course format for use in orientation courses and teacher tutoring at universities.

An important goal is to recruit tutors and other interested people from different universities to design a course format that is suitable for their own university.
A large challenge is to find ways to adapt the introductory orientation and tutoring – organised very differently in different universities – and the brilliant course material – result of many years of development – for universal use. Thus it could support new students all over Finland in getting started with their university studies.
Main tasks are to:

- Help students find their own role as members of the scientific community, developing their study skills and enabling them to adopt an active, systematic and independent mode of studying
- Provide active support and counselling to students at the very beginning
- Provide orientation for exchange students.

Task complexity, information needs and use of information resources in city planning

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/City_planning.htm*
Original website: *http://www.info.uta.fi/tutkimus/irix/projects.php#serola1*

Start Date: Autumn 2002
End Date: Spring 2007

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IRiX (Research Group on Information Retrieval in Context) projects

Task complexity, information needs and use of information resources in city planning

This is one of the **IRiX** (Research Group on Information Retrieval in Context) **projects.**
The aim of the study is to find out **how 17 planners from the City of Tampere in Finland are using Net resources in their everyday work.**
The use of Net resources is studied in the context of perceived work tasks, perceived types of the information sought, and the use of information resources in general.
Each participant was interviewed and observed in three stages.
First, a pre-interview was conducted in order to find out what are the participants' work tasks and information-seeking habits in general. Next, the participants were asked to log their Internet browser's search history log during one month.
After that followed the post-interview where the participants were asked to recall what tasks and information needs they had had during the last 2 to 4 weeks in relation to the search history.

The analysis is based on the model of task complexity, information types and sources presented by Byström (JASIST 53(7)).
The work tasks are classified into main tasks typical for city planners. Information resources are classified based on the location of the person or organization that provides the access to the channel or data.

The aim is to find out how task complexity and task type affect on the information types needed and the choice of information resources.
The study was started in the Autumn 2002. The interviews and observation were carried out in Autumn 2003. The results are reported in Ph.D. thesis in Spring 2007.

Characteristics of scholarly domains and patterns of searching and using literature provided by FinElib

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/CharacteristicsFinElib.htm
Original website: *http://www.info.uta.fi/tutkimus/irix/projects.php#talja1*

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IRiX (Research Group on Information Retrieval in Context) projects

Characteristics of scholarly domains and patterns of searching and using literature provided by FinElib

This is one of the **IRiX** (Research Group on Information Retrieval in Context) **projects.**
The aim of this project is to explore the characteristics of disciplines that underpin **differences in scholarly communities' information practices**, especially **the methods of searching and accessing networked information.**
Whitley's (1984) theory is extended to develop hypotheses concerning the relations between a field's research culture and its communication system, nature of information resources, and patterns of literature use.
Among the aspects explored are field interdependency, work patterns/group membership, and scattering of relevant resources.
The data used in this study come from FinElib user questionnaires.

Parts of this project are carried out in collaboration with **Dr Paul Wouters** and **Dr Jenny Fry** (NIWI, Amsterdam, **The Netherlands**).

Enhancing conceptually structured terminological support for searchers of health information

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Enhancing_healthinformation.htm
Original website: *http://www.info.uta.fi/tutkimus/irix/projects.php#vakkari1*

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IRiX (Research Group on Information Retrieval in Context) projects

Enhancing conceptually structured terminological support for searchers of health information

This is one of the **IRiX** (Research Group on Information Retrieval in Context) **projects.**
The aim of ontologies is to support human actors to find expressions of their information needs for searching and browsing in information systems. Typically they have been built on some domain specific principles not necessarily taking into account users' ways of conceptualizing and expressing things. It is an open question to which degree the expressions in a health ontology correspond to the expressions of users. The utility of the ontology to its users in expressing their information needs depends to a great extent to the degree of this match.
The aim of the project is **to analyze citizens' information needs and searching in central areas of health matters** for generating ideas **how to improve health ontology for citizens' health portai** initiated by National Public Health Institute (KTL). It is studied to which degree the expressions of concepts in citizens' information problems in central areas of health are covered by the expressions of concepts in FinMeSH and YSA (General Finnish Thesaurus).
The vocabulary and search tactics used in health web queries of various citizen groups is also analyzed. The core vocabularies of these groups are compared with the vocabularies of FinnMeSH and YSA. Conclusions of the enrichment of the ontology are drawn based on the results.

Web searching at work

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Web.htm*
Original website: *http://www.uta.fi/~ss58604/vety/.*

Start Date: 2003
End Date: 2006

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FIRE (Finnish Information Retrieval Expert Group) projects

Web searching at work

This is one of the FIRE (Finnish Information Retrieval Expert Group) projects.
The goal of Serola's PhD study is to examine the use of organised Web resources in professions where Internet is used regularly for seeking information. The target is to find out the type of task related information needs, which can be satisfied only or more easily through Web than through other channels. Moreover the purpose is to find out how the searchers utilize different sources and search strategies when they try to retrieve useful information on the Internet. Also it is tried to find out how the informants use to manage net information for re-use. By understanding the users' ways to construct their view on net it is possible to develop either new or already existing tools so that they may serve the users' needs more effectively.

Web searching in city planners' work: Net resources used and information types needed in varying subtasks
Serola's aim is to study Net searching of city planners in their work task performance. The research project has been divided in three parts. At the macro-level the aim is to study what overall assignments the city planners' are obliged to do and how the distribution of work is organized between employees. At the meso-level it is analysed how the types of perceived subtasks at hand are connected with the perceived types of information needed and the selection of information resources. At the micro-level it is examined how the choice of information resources affects on the selection of search tools and search strategies on the Net.

See also:
- *http://www.info.uta.fi/tutkimus/fire/fireprojects.html#serola* (removed in 2005);
- **Task complexity, information needs and use of information resources in city planning** (see p. 249-250).

Assessing learning outcomes in two information retrieval learning environments

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Assessing.htm*
Original website:
http://www.info.uta.fi/tutkimus/fire/archive/2005/Halttunen&Jarvelin2005preprint.pdf

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FIRE (Finnish Information Retrieval Expert Group) projects

Assessing learning outcomes in two information retrieval learning environments

The focus of this study is **the assessment of learning outcomes in an experimental, but naturalistic, learning environment compared to more traditional instruction.** The 57 participants of an introductory course on IR were selected for this study, and the analysis illustrates their learning outcomes **regarding both conceptual change and development of IR skill. Concept mapping** of student essays was used to analyze conceptual change and log files of search exercises provided data for performance assessment. Students in the experimental learning environment changed their conceptions more regarding linguistic aspects of IR and paid more emphasis on planning and management of search process. **Performance assessment** indicates that anchored instruction and scaffolding with an instructional tool, the IR Game, with performance feedback enables students to construct queries with fewer semantic knowledge errors also in operational IR systems.

Looking at the outcomes is part of a larger research effort in order to develop and evaluate modules of an IR learning environment. This **FIRE research project** consists of **four studies**, namely:

- The design of Information Retrieval Game (also called Query Performance Analyzer), one module of the learning environment, and pilot evaluation of instructional use of this software application.
- A study on students' prior conceptions of IR and their implications for the design of IR learning environments.
- An investigation on students' learning experiences and performance in two learning environments.
- **An evaluation of learning outcomes.**

In order to evaluate the instructional design and its experienced and observed effects on performance and learning outcomes, **a design experiment was carried out. Tutored exercises were carried out in two different ways.** In the ***traditional learning environment***, different operational search systems were used to demonstrate the basic functions of IR systems. In the ***experimental setting***, full-text newspaper articles from local newspaper along with a press image database were used. **These sources were used through the IR Game**, a system which offers feedback to the searcher on the effectiveness of queries based on recall-base. The IR Game was based on the innovation to apply a test collection created for laboratory-based IR experiments as an instructional tool. Various ideas of scaffolding and anchored instruction were applied in the experimental learning environment.

Research questions

Comparison of learning outcomes in the two IR learning environments form the basis for evaluation in the present project and contribute to the knowledge of IR teaching and learning. The specific research questions are:

- How students' conceptions of IR know-how developed during the instruction?

- What was the level of IR skills in the end of the instruction?
- Were there differences between groups studying in the traditional or the experimental learning environment in the development of conceptions or IR skills?
- Were there differences in the development of conceptions or IR skills related to student status (information studies major/minor), learning style, prior conceptions of IR know-how, or the academic discipline that they are studying as their major subject?

Conclusions

The experimental group changed fundamentally, or ignored, more concepts while studying than students in the traditional learning environment. The traditional group was somewhat more stable in their conceptions throughout the instruction. The emphasis of information sources and computer skills diminished more in experimental group. The experimental group paid more emphasis on linguistics as an element of IR know-how than students did in the traditional group. The same trend was also related to the role of intermediaries as well as planning and management of searching process. Instructional approaches, i.e. anchoring and scaffolding, applied seem to be promising strategies to stress the importance of planning and management of search process, as well as putting emphasis on important linguistic aspects of IR.

The analysis of conceptual change that relates to students' prior conceptions revealed successful learning outcomes. Regardless of sparse conceptions in the beginning of the instruction, the participants were able to form an overall picture of IR activities.

There is some qualitative differences of students' conceptions in traditional and experimental learning environments.

First, *problem formulators* in experimental group covered phases of search process more exhaustively than students in traditional group.

Second, both *process identifiers* and *source identifiers* enriched their concepts related to assessment more in experimental learning environment.

The results indicate that **different student groups implement different strategies to form a usable conceptual framework for further studies.** Making use of prior conceptions and the identification of formation strategies could be used as successful instructional approach in IR.

In the experimental learning environment the overall trend related to ali learning styles was the emphasis on linguistic aspects of IR. Also assessment of information was emphasized in experimental environment in all other learning styles than concrete experience.

Qualitative differences in concept according to student status and learning environments were following.

First, major students emphasized IR methods both in traditional and experimental learning environment.

Second, students studying in experimental groups provided richer description on evaluation, linguistic aspects and information use as elements of IR know-how than students in traditional groups.

Third, traditional groups emphasized more general knowledge and information storage as important elements of IR know-how.

The development of IR skills was evaluated through performance assessment, which took place **in the last session of tutored exercises.** The IR system and database used in this session was new to all of the participants. **There was a statistically significant difference in the error types which students encountered in these exercises.** The traditional group made much more semantic knowledge errors than participants who studied in the experimental learning environment. These errors were

related to the process of transforming a search assignment into a query. Students from both learning environments made quite the same number of syntactic knowledge errors. It seems that both groups were able to overcome problems with syntactic errors with active exploration, but semantic problems affected their overall performance since students in traditional environment were not able to reach as good search results as participants in experimental group.

See: **Halttunen, K. - Järvelin, K, *Assessing learning outcomes in two information retrieval learning environments.* "Information Processing & Management", 41 (2005), n. 4 (July), p. 949-972**
(preprint in PDF is available at
http://www.info.uta.fi/tutkimus/fire/archive/2005/Halttunen&Jarvelin2005preprint.pdf)

Searching Behavior of Journalists: Information Retrieval in the Newsroom

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Searching.htm*
Original website: *http://www.info.uta.fi/tutkimus/regis/researchers.php#Hannele_Fabritius*

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REGIS (Research Group on Information Seeking) projects

Searching Behavior of Journalists: Information Retrieval in the Newsroom

The purpose of the study – one of the **REGIS** (Research Group on Information Seeking) projects – is to investigate **searching behaviour of journalists.**
The study aims to find out **how newspaper journalists conduct searches from databases** (text archive) when writing news and articles. **It is important to study information retrieval by journalists in the context of daily work, journalistic practice.**
From that point of view, the study seeks to find out what the impact of the new technology (including online databases, CD-ROM files, e-mail, Internet resources etc.) on the journalistic work is. **The focus is particularly on in-house databases.**
Like in most other professions the use of information systems and information retrieval applications does not form the main goal of the work tasks of journalists; it takes **a minor and supporting role.** However, **information seeking is an essential element** in the journalistic work.
The purpose of the project is to investigate, what is the role of digital information in journalistic writing, how the journalists utilise information technology and how well or badly the digital systems support journalistic work.

The research focuses on **two issues of interest; firstly, the journalistic work practice and the journalists' information environment, and secondly, the role of digitai information in news reporting, which is the main issue of the study.** The research questions are as follows.

1. What kind of task is news reporting as a journalistic work process? What is the nature of the information environment of journalists? What kinds of sources do the journalists use? Do they find these sources satisfactory? Which problems and barriers have they faced while using these sources, particularly digital information?
2. What is the role of digital information in the journalistic work; in particular, in covering the news events? What is the purpose of the search for digital information in preparing a particular piece of news or other journalistic item? How are the digital sources utilised? Is digital information replacing or complementing some traditional ways to seek information? If so, which sources are being replaced? What is the relationship between digital information and information acquired or sought from other sources?

The journalistic information searching behaviour is investigated by means of seven hierarchical concepts. When moving **from general to more specific** the concepts are: **the journalistic culture, the medium's culture, the department's culture, the journalistic work practice, the journalistic item process, the information seeking and retrieval processes.**

Rich and detailed information can be found in the following paper:
Hannele Fabritius, *Information Seeking in the Newsroom. Application of the Cognitive Framework for Analysis of the Work Context.* "Information Research", Vol. 4, No. 2 (October 1998).
It is one of the Doctoral Workshop Papers from "Information Seeking in Context" - an International Conference on Information Needs, Seeking and Use in Different Contexts, Sheffield, August 1998.

Information needs and information seeking behaviour of scientists

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Information_scientistsproject.htm
Original website: *http://www.info.uta.fi/tutkimus/regis/researchers.php#Aiki_Tibar*

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REGIS (Research Group on Information Seeking) projects

Information needs and information seeking behaviour of scientists

The study - one of the **REGIS** (Research Group on Information Seeking) projects - aims at adding **knowledge of the information behaviour of scientists from two perspectives:**
1. first, the focus is placed on identifying **scientists' information needs** and indicating how their information needs are satisfied in general;
2. second, the focus is placed on exploring **scientists' information seeking behaviour** after the advent of the Internet in particular.

Major research questions are:
- What kind of information sources do scientists use for their research?
- Which criteria are important in the selection of information sources?
- What kind of barriers exist in accessing needed information?

Using questionnaire survey and theme interviews data are collected from the academic and research staff at **Tallinn University of Technology**, Estonia.
Expected outcomes include: further developed **model of information seeking behaviour of scientists**, and **recommendations to develop further services at Tallinn University of Technology Library** in order to meet scientists' information needs in a more accurate manner.

Using the Internet for Non-work Information Seeking

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Non-work.htm*
Original website: *http://www.info.uta.fi/tutkimus/regis/researchers.php#Ari_Haasio*

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REGIS (Research Group on Information Seeking) projects

Using the Internet for Non-work Information Seeking

The goal of this research – one of the REGIS (Research Group on Information Seeking) projects – is to find out for which purposes citizens use Internet in their everyday life.
The focus of this research is on the non-work information seeking and on those reasons why people use Internet and which are the reasons for non-use.
One of the aims is to explain in what kind of situations people prefer Internet and how does their lifestyle and social background effect to information seeking process. Which are the differences in using the Internet for non-work information seeking between academically educated people and non-academic people?
Most of the data is qualitative and 50 people are interviewed for this study; 25 of them are non-academic from the background and 25 of them have at least bachelor's degree.

Web Searching in the Context of Information Seeking Related to Self-development

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Self-development.htm*
Original website: *http://www.info.uta.fi/tutkimus/regis/researchers.php#Kari_and_Savolainen*

Start Date: May 2001
End Date: December 2005

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REGIS (Research Group on Information Seeking) projects

Web Searching in the Context of Information Seeking Related to Self-development

This REGIS (Research Group on Information Seeking) project is a component of a larger research project named ***Searching and Relevance in the Internet*** which also incorporates four other studies:

- Internet use for non-work needs (Ari Haasio) - see p. 265-266
- Researcher, information retrieval, and cognitive processes in Web environment (Eero Pantzar)
- Task-centric information seeking and retrieval from networked indices (Sami Serola)
- Developing relevance assessment of network material (Eero Sormunen).

Haasio's inquiry comes closest to this, because it examines so-called "ordinary people's" information action in their free time. Pantzar scrutinizes processes, Serola endorses the viewpoint of information seeking, and Sormunen looks at relevance.

This study focusing on everyday life information seeking via the Internet was launched in the Spring of 2001. Its mission is twofold.

The *empirical* intention is to look at how the Internet, especially the World Wide Web, is used by people in searching for information, and what its role is in information seeking in the domain of self-development.

The *theoretical* aim of the project is to develop a truly contextual model of Web searching. At the metatheoretical level, this piece of research is most of all informed by Brenda Dervin's Sense-Making approach which stresses the situational character of constructing meanings.

Through the local public library and adult education centres in Tampere, were found 8 volunteers to represent self-developers. The empirical data was mainly elicited by interviewing, observing and thinking aloud during November 2001 - January 2002. The material was recorded on audio and video tape. Thereafter, the empirical data were transformed into computer-readable text. The major methods of analysing are content analysis, discourse analysis, typologizing, and cross-tabulation. Some quantitative measures are made use of, too, but predominantly for the purposes of illustration and comparison.

Cf. Jarkko Kari – Reio Savoilanen, ***Web Searching in the Context of Information Seeking in Everyday Life.*** A Synopsis of Research Proposal, 2 April 2002.

Further information about the project can be found in the following papers:

- Kari, Jarkko - Savolainen, Reijo, *Towards a contextual model of information seeking on the Web.* Paper submitted to ISIC 2002 — Information Seeking in Context: The Fourth International Conference on Information Needs, Seeking and Use in Different Contexts. Lisbon, September 11-13, 2002. (There is the theoretical basis of the inquiry).
- Kari, Jarkko - Savolainen, Reijo, *Web searching in the context of information seeking in everyday life: The cases of civic and spiritual action. A research proposal.* Paper presented at Summer school on web searching. Tampere, August 19-21, 2001. Also http://www.uta.fi/~csjakar/kari-savolainen.pdf 23.1.2002 (It has been delineated how the research questions were operationalized and the data collected).
- Kari, Jarkko - Savolainen, Reijo, *Web searching in the context of information seeking related to self-development: A plan for analysis.* (A blueprint for data processing and analysis).

Information and learning

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Information_and_learning.htm
Original website: *http://www.abo.fi/fak/esf/bii/abstrakt.htm* (removed in 2006)

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Research at the Åbo Akademi, Department of Information Studies: Information behaviour in learning environments

Information and learning

The project has its base in **information science** and specifically in the field of **information behaviour.**
New educational methods, the electronic environment and **the librarians' new role as supervisor** are important aspects.
In this new environment knowledge about individual information behaviour, the impact of electronic learning environments and the role of librarians in the learning process become essential for developing effective learning environments.
The overall aim is to get this knowledge by studying the relations between information behaviour and the learning process.
Information and learning are studied from many perspectives, which together give **a picture of the information behaviour of students in the learning process.** The research project is composed of **three parts:**

- **Students' information seeking behaviour in an activating learning approach** (Eeva-Liisa Eskola) – see p. 272-274
- **The impact of personality on information behaviour and learning** (Jannica Heinström)
- **The changing role of the librarian - the challenges from polytechnic education and problem based learning** (Kerstin Rosenqvist).

Aims

In order to give **a picture of the information behaviour of students in the learning process,** the implications of **student-oriented teaching methods, cognitive aspects of information seeking** and **the electronic environment** are studied.
The three actors in the new learning process, **the student, the teacher,** and **the librarian** are also in the focus of the project in order to better understand **how library instruction should be developed to support information literacy and what skills a librarian needs** in the changed educational environment.

Research problem and methods

In this project the relations between information behaviour and the learning process are studied broadly **in the frame of information science. The main research questions are:**

- How are students' information needs, seeking and use affected by the problem based learning approach and by other student-oriented teaching methods?
- How does the individuals' personality influence their information behaviour and learning?
- Which type of personality has the ability of seeking information effectively?
- How does the role of the librarian change when it moves from providing teaching to support learning?
- Where do teachers and librarians meet in their tutorial roles?
- **How can library instruction support the students' development to information literacy?**

Hypotheses

- **Activating teaching methods result in a changed information behaviour**, which is seen as the students' active and diversified use of information channels and sources.
- The way in which students seek information and the way in which they learn can be explained by their **personality**. With activating teaching methods, where the students have a more active and independent role, this will be more evident.
- **Learning style, search behaviour and personality** are reflected **in the students' study results.**
- **Library instruction aiming at information literacy should be developed in collaboration between teachers and librarians** in a way that reflects information behaviour in the subject field.
- **Librarians need in a higher degree** than before **communication skills and pedagogical skills.**

Qualitative methods are used since they are well suited for studies of complex phenomenon in the society. They are **observation, text analyses (diaries) and unstructured interviews.**
They cannot be used to generalize the research results, but to create a better understanding of the problem areas studied. The validity of the qualitative methods used are enhanced through **triangulation.**
Quantitative methods are used where appropriate.

Results

Knowledge of **the connection between activating teaching methods and the information behaviour** and of **the connection between personality and information seeking** can support the understanding of different information behaviours of students, and **help teachers, tutors and librarians support the students in their information seeking.**
The search strategy is an expression of the cognitive style. It is important to be aware of how it affects learning so that the student in a weaker position can be significantly helped.
Knowledge about the work of the librarian in a changing work situation facilitates education of librarians and the libraries get useful information from the way work is prearranged at educational units. The outmost goals is to support a development towards better library- and information services to benefit both students and teachers.

University students' information seeking behaviour in a changing learning environment

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/University_students.htm*
Original website: *http://informationr.net/ir/4-2/isic/eeskola.html*

Start Date: 1997
End Date: 2001

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Research at the Åbo Akademi, Department of Information Studies: Information behaviour in learning environments

University students' information seeking behaviour in a changing learning environment
How are students' information needs, seeking and use affected by new teaching methods?

This is a subproject of Information and learning (see p. 269-271), a research project of the Department of Information Studies at the Åbo Akademi University.

Aim of the study

The aim of this two-phased study is to investigate what kind of activating teaching methods are in use in the Finnish universities, and how students' information behaviour is affected by these methods. A model for information behaviour of university students is the result of the study. The model has been developed on the basis of existing theories of information behaviour, learning, and empirical studies.

The two phases are:

1 How are students information needs, seeking and use affected by the problem-based learning (PBL) approach? - A comparative study of information behaviour between medical students studying according the problem-based curriculum and the traditional curriculum (see p. 275-276).
2 University students' information behaviour in a changing learning environment - The effect of new teaching methods on information behaviour.

In the first phase the main problem is to study how problem-based learning affects information needs, seeking and use, i.e. information behaviour, of university students.

The main question of the second phase is: How do activating, self-directed methods of teaching and learning influence university students' information behaviour?

The basic assumption of this study is that activating, self-directed methods of learning, for example PBL, lead students to a diversified and active use of various sources and channels of information. This assumption is based on the modern conception of learning according to which learners are actively constructing knowledge and skills, the cognitive psychology's view of human beings as active and goal-directed, who seek for feedback and information about themselves and the world. The assumption is also based on the experiences reported by studies concerning student-centered teaching methods and library use as part of information behaviour.

Data material and method

The study consists of a theoretical and an empirical part.

The empirical part is divided into two phases.

The research methods in the first phase are qualitative. In the second phase both qualitative and quantitative methods are applied.

Research material and data collecting methods

The material of the study consists of data which are collected and analysed by qualitative and quantitative methods.

In the first phase the information behaviour of students in medicai education are studied. The study objects are students in the university of Tampere medical faculty in the problem-based learning education and students in the medical faculty of Turku university studying according to the traditional curriculum. Because of the qualitative methods for collecting and analysing data the number of subjects in both groups are 15 - 20.

The methods for collecting data are interviews (open-ended questions), students' diaries and observation.

The second phase of the study is based on the findings of the first phase. The developed model for information behaviour is tested empirically in the context of other activating teaching methods in addition to PBL.

First, information about those methods and the use of them in the Finnish universities are collected by questionnaires to university teachers. The study objects are randomized among the teachers. Because of the large sample data are analysed by quantitative methods.

Secondly, those students which have been taught by activating teaching methods are interviewed about their information behaviour.

Work plan

Collection of data for the first phase: **1997-1998,**
analysis and conclusions of the first phase: **1998 - Spring 1999,**
collection of data for the second phase: **Autumn 1999 - 2000,**
analysis and conclusions of the second phase: **2001.**

See:

Eeva-Liisa Eskola, ***University students' information seeking behaviour in a changing learning environment - How are students' information needs, seeking and use affected by new teaching methods?*** **"Information Research", Vol. 4, No. 2 (October 1998)** (available online at: *http://informationr.net/ir/4-2/isic/eeskola.html*). It is one of the Doctoral Workshop Papers from "Information Seeking in Context" - an International Conference on Information Needs, Seeking and Use in Different Contexts, Sheffield, August 1998.

Information behaviour of medical students studying in the problem-based and traditional curriculum

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Information_Behaviour.htm
Original website: *http://www.abo.fi/fak/esf/bii/research/page5.htm*

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Eeva-Liisa Eskola

Research at the Åbo Akademi, Department of Information Studies: Information behaviour in learning environments

Information behaviour of medical students studying in the problem-based and traditional curriculum

The aim of this research project was to explore **relationships between learning methods and students' information behaviour in Finland.**
Thus was created an understanding of the phenomena which further can be used in the development of purposeful learning environments. **Information behaviour of medical students in two different curricula was studied.**
The research was implemented in 1998 when 16 second-year students in **a problem based curriculum** and 15 second-year students in **a lecture based curriculum** with an early patient contact programme were studied.
The data were gathered through thematic interviews and analysed by **qualitative methods.** The background of the study lies in the changes in approaches to learning and learning methods.

For useful information about **this research, its genesis and development,** and **the data collecting methods** see:
University students' information seeking behaviour in a changing learning environment (see p. 272-274).

Information seeking behaviour of scholars in the context of a research group

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Information_scholars.htm
Original website: *http://www.abo.fi/fak/esf/bii/research/page3.htm*

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Research at the Åbo Akademi, Department of Information Studies: Digital milieus and information behaviour

Information seeking behaviour of scholars in the context of a research group

The project aims at exploring the information behaviour of social scientists and human studies scholars in the context of a research group.
The main research questions are:

- **How much do scholars share information, and what kind of collaboration** does occur in a research group **concerning information seeking?**
- **Or do scholars work individually also** in the context of a research group?

Five decades information seeking skills for costumers in Finnish public libraries

English outline in EnIL: *http://www.cens.cnr.it/Basili/EnIL/gateway/finland/Decades_libraries.htm*
Original website: *http://www.abo.fi/fak/esf/bii/research/page3.htm*

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Research at the Åbo Akademi, Department of Information Studies: Digital milieus and information behaviour

Five decades information seeking skills for costumers in Finnish public libraries

Objective of the study is to understand and describe **models used in information skills training considering social, cultural and economic changes** which have had influence on how public libraries have trained their customers in information seeking.
Learning and education in the information society undergo changes for several reasons, which are related to social changes, cultural changes, economic changes, and **the new view on learning**.
This has caused **ongoing change in the focus of information skills training**.

Bridges and barriers: access to and understanding of medical information among elderly Swedish-speaking Finns

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Bridges_medical.htm*
Original website: *http://www.abo.fi/fak/esf/bii/research/page2.htm*

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Research at the Åbo Akademi, Department of Information Studies: Health information behaviour

Bridges and barriers: access to and understanding of medical information among elderly Swedish-speaking Finns

The aim of this research is to study access to and understanding of medical information among Swedish-speaking Finns, aged 65 years or older.

The rather new concept of **'health information literacy'** is used.
The focus is on how these people understand and use the medical information they obtain from health professionals or the pharmacy, from written information about medication, or from the media. Which information strategies are used to bridge a gap or to pull down barriers to understanding?

Search strategies in searching for health (medical) information on the World Wide Web

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Citizens_health.htm*
Original website: *http://www.abo.fi/instut/healthinfoproject/healthplan.htm#Margit*

Start Date: April 2000
End Date: June 2002

Institution:
Department of Information Studies, Åbo Akademi University
<http://www.abo.fi/fak/esf/bii/index_eng.htm>

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Research at the Åbo Akademi, Department of Information Studies: Health information behaviour

Search strategies in searching for health (medical) information on the World Wide Web

This is a subproject of the project "**Use of Health Information**", within the research project "**Citizens, Health and the Changing Media Culture**" financed by Academy of Finland, Media Culture Research Program.
In it **information searching and relevance judgement** in the new electronic communication culture is considered.
The purpose of the study is **to analyse search strategies and relevance judgement principles** in **searching for health and medical information on the web.**
Both professionals' and non-professionals' behaviour is investigated because different competencies may cause different behaviours and judgements.

Research questions

1) **which kinds of topics** are **health care professionals** and **citizens** (ordinary people) **searching on the web,** and how do they differ from each other
2) **which kinds of search strategies** are used in searching for health and medical information on the web by **health care professionals**
3) **which kinds of search strategies** are used in searching for health and medical information on the web by **citizens**
4) **how do the search strategies** used by health care professionals and citizens **differ from each other**
5) **on which basis do health care professionals select relevant documents** from among those web documents which were found in a search
6) **on which basis do citizens select relevant documents** from among those web documents which were found in a search
7) **how do the selection criteria** used by health care professionals and citizens **differ from each other**
8) **which relevance attributes** are important when **health care professionals** judge (estimate) the relevance of web-documents
9) **which relevance attributes** are important when **citizens** judge (estimate) the relevance of web documents, and
10) **do relevance judgement principles of health care professionals and citizens differ from each other.**

Research data and methods

The data for the study are collected by **interviews** and in **test situations.**
In the **test situations** data about the informants' search behaviour and search strategies are collected. In the test situations search diaries, observation and log files are used.
By **interviews** before the test situations data about subjects and their knowledge about web and health and medical issues are collected. By interviews after test situations, data about relevance judgements of web documents are collected.
The study contributes to understanding about:
- **searching for health information** in the new electronic communication culture;

- **various skills used in searching for information on the web** and **various relevance judgement principles** employed in evaluating hyperdocuments available on the web.

The results of the study can be used when developing web search services and also in teaching people how to take a benefit about the services which can be reached via the web.

See also: *http://www.oulu.fi/informaatiotutkimus/tutkimus/toteutetut.html*.

Hatchery - an effective approach for supporting the students' thesis processes

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/finland/Moodle_project.htm*
Original website: *http://www.ck-iv.dk/papers/MaekinenMaentymaeki%20Living%20interaction%20and%20flexible%20solutions.pdf*

Start Date: October 2005-

Institutions:
- University of Vaasa <*http://www.uwasa.fi/kv-asiat/english/*>
- Tritonia Academic Library <*http://www.tritonia.fi/etusivu_en.php*>
- Tritonia Learning Centre <*http://oppimiskeskus.tritonia.fi/*>

Vaasa

Addresses:
University of Vaasa
International Office
Street address: Wolffintie 34
P.O. Box 700
FIN-65101 Vaasa
Fax +358 6 324 8179
Tritonia Academic Library
Street address: Yliopistonranta 7
P.O.Box 331
FIN-65101 Vaasa
Tritonia Learning Centre
Yliopistonranta 7/PL 331
FIN-65101 Vaasa

Contact person:
Tiina Mäntymäki

Hatchery - an effective approach for supporting the students' thesis processes

Hatchery, a collaborative project between Tritonia - the Academic Library and the Learning Centre - and the University of Vaasa, is a pedagogical development project in which a Moodle-based virtual environment was used as a complementary element in the Master's thesis process.
At the University of Vaasa this pilot project was launched in October 2005 with the aim to find ways of supporting the students' thesis processes outside the discipline-specific supervision given by the departments.
Altogether 24 students were selected to the two Hatchery groups that met face to face once a month.

The Hatchery had three main focuses:

- To pay attention and support the students' working process;
- To make use of the internal dynamic of the peer group in the thesis process;
- To introduce a Moodle-based virtual environment as a complementary supportive element for the working process.

Regardless of level or discipline the working process follows basicly the same lines and all thesis processes have a number of common denominators.
There has to be an idea, a topic, the topic will have to be delimited, research questions defined.
There has to be a material, theoretical and methodological questions will have to be taken into account, the material has to be analyzed, results discussed etc. In addition, a great deal of literature will have to be read, the research report has to be written, revised and once again revised etc.
The students are helped work themselves through the thesis process step by step, from planning a realistic timetable to the final version.
Each group meeting had an official theme based on what we had defined as the different stages of the process, in addition to which the students were allowed an opportunity to present their work, introduce topical questions and discuss them with the supervisor and their peers.
Particularly the support given by the peer group – or the social pressure as the students themselves defined it – was considered to be of crucial importance for the progress.
The basic aim with the Moodle environment was to provide the students with tools for the management of their own thesis processes, to promote self-directness and responsibility for one's work within a social learning environment that simultaneously also provides support for each individual thesis writer.

In the student feedback the importance of the support given by the peer group was emphasised.
As regards the supervisors, clear answers to questions and practical instructions were appreciated.
The Moodle environment was found useful in certain aspects but more interaction and concrete material was wished for.
On the whole, the result of the Hatchery was very satisfactory.
Four students finished their thesis within the time given. Another four will finish during the Summer and those who worked more slowly have asked for two more meetings during next Autumn to make sure that they also can finish their work. Five students of 24 dropped out.

The Hatchery has been a learning process both for the students and the supervisors. The students learn to write a thesis and become aware of the process as a whole. The supervisors are no longer authorities and become coaches, advisors or partners in a shared project.

Useful information about the project are available in English in the following paper, presented at Creating Knowledge IV - Empowering the Student through Cross-Institutional Collaboration. International conference at The Royal Library and University of Copenhagen. Copenhagen, 16-18 August 2006:

Olli Mäkinen - Tiina Mäntymäki, ***Living interaction and flexible solutions in the changing world of academic studies*** (p. 3 ff.).

Media partners Library and School: reading and information literacy NRW

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/NRW.htm*
Original website: *http://www.medienpartner-nrw.de/sites/we_home.php* (in German)

Start Date: 1 April 2002
End Date: 31 December 2004

Institutions:

- Bertelsmann Foundation *<http://en.bertelsmann-stiftung.de/index.html>*
  Gütersloh
- Ministry for City Planning and Building, Culture and Sport of the Land Nordrhein-Westfalen *<http://www.mswks.nrw.de/>*
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Media partners Library and School: reading and information literacy NRW

With this cooperative project the **Bertelsmann Foundation** and the **Ministry for City Planning and Building, Culture and Sport of the Land Nordrhein-Westfalen** contribute to fostering the **development of reading and information literacy** through the **strategie partnership between public libraries and schools.**
Schools have libraries as competent, reliable and experienced media partners: libraries professionally support them in order to improve reading and information literacy of pupils and students.
Libraries become always more teaching libraries, and their activities are integrated into the curricula of teaching institutions; the libraries systematically open to the target groups "young customers" and "teachers".
Municipalities present themselves education-friendly.
Pupils and students gain effective measures in order to develop their reading and information literacy.

In order to enhance reading and information literacy the project "Public library and School – new forms of the partnership" lasted 5 years (1995-2000) has developed and tested different **methods.**
They are now widely used, improved and developed within **a network of 38 municipalities of the Land Nordrhein-Westfalen.**
At the same time new systematic forms of co-operation between library and school should be further developed.
Within the project public libraries effectively support schools through their media offers and services.

The **first project phase** started in **June 2002** with 25 municipalities of the Land Nordrhein-Westfalen.
The **second phase** started in **May 2003** with further 13 municipalities of NRW.
Detailed information about the **project participants** is available in German at:
http://www.medienpartner-nrw.de/sites/teilnehmer1.php (phase 1)
http://www.medienpartner-nrw.de/sites/teilnehmer2.php (phase 2)

The following **co-operation methods** have been introduced and developed:
Media boxes
Teaching in the library
Media presentations in teaching
Action programs
Conducting classes in the library in order to direct them to action
School centre in the library
Conducting classes through multimedia
Information literacy teaching unit
Introduction to reading development for parents.

Further information is available online in German only about:
the project strategy
the project organisation
its tested products
its innovative products.

Detlev Dannenberg - Bardo Herzig - Helene Renger (*et al.*), *Guidelines for the development of teaching units to enhance information literacy*
- see p. 297-299

The spiral curriculum: a master plan for the development of reading
- see p. 294-296

Ten theses to read

1. Children as capital of our society
2. Speaking and reading
3. Reading and media literacy
4. Ensuring free access to books
5. Learning to read
6. Continuing teaching to read
7. Measures against the "break of reading" – how to motivate young people to read
8. Developing reading with new electronic media
9. Trend towards reading specialised texts
10. Multicultural needs for reading.

Qualification activities (ended in March 2005)
Organisation: the qualification program is organised, managed and run by the Rheinland Media Centre, in charge of the Bertelsmann Foundation and the Ministry for City Planning and Building, Culture and Sport of the Land NRW. It provides professional media products within audio, video and multimedia as well as offers for developing media literacy.
Offers: the project gives all participants a qualification both at a methodical and professional/contents level. The specialisations consist of basic offers – the same for all participants – and optional offers – individually planned and organised according to the need of each LIKo-Group.

LIKo-Groups
Within the project *Media partners Library and School: reading and information literacy NRW* each local community forms a local project group, a LIKo-Group, in order to develop reading and information literacy. It includes representatives of the library, of the schools and of the parents.
They meet at least 6 times per year. The experiences exchange among the single LIKo-Groups is regular and actively and continuously promoted.

Qualification: different offers
Each LIKo-Group has at its disposal its own budget for the optional specialisations.
Each basic qualification offer involves many LIKo-Groups.
In order to satisfy further needs for qualification, the LIKo-Groups can apply to the Rheinland Media Centre, that organises and runs optional specialisation programs tailored to meet their individual demands.
Further information about the LIKo-Groups' organisation, and their role in the local communities is available in German only.
See:
http://www.medienpartner-nrw.de/sites/we_qualifizierung_organisation.php;
http://www.medienpartner-nrw.de/sites/we_qualifizierung_angebote.php;
http://www.medienpartner-nrw.de/sites/lesekommune.php.

Reading Municipality

Within the network of local communities participating in the project, the "reading partners" should act locally and decide and perform **common partner actions** according to other ones, both at the Federal and Land level.

A rich list of useful **publications**, various materials and products are available **in German** at: *http://www.medienpartner-nrw.de/sites/we_download.php*.
Among them, there are:

- **Information about the project** (a project description dated 12.05.2003)
- **Reading development in the world of tomorrow. Models for the partnership between the library and the school** (edited by Bertelsmann Stiftung, 2000)

Additional information can be found **in German at the related website**: ***www.bildungspartner.nrw.de/***.
An interesting subproject is **Media partners: Library and School in Warendorf** (see p. 300-303). Its web site shares its own experiences, implementations and project developments.

The spiral curriculum: a master plan for the development of reading

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/spiral.htm*
Original website: *http://www.medienpartner-nrw.de/downloads/lesen_foerdern.pdf* (in German)

Institutions:

- Bertelsmann Foundation <*http://en.bertelsmann-stiftung.de/index.html*>
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Heike Daume, *The spiral curriculum: a master plan for the development of reading* (p. 109-131)

The spirai curriculum was set up within the project "Public library and School – new forms of the partnership" closed in 2000.
It is like a system of constructions, and the building stones are offers of education plans.
It is mainly useful **for strengthening the co-operation between libraries and schools.**

Stimuli

The idea arose during a continuing professional development course for teachers, "Reading at school – Motivation and methods", carried out by Bertelsmann Foundation in June 1996 at Gütersloh.
The participants in the training contributed to developing the spiral curricula, in order to promote and enhance reading at school.
The teams of all the towns involved in the project took this idea home and began to develop the concepts. All the towns involved in the project have developed a spiral curriculum and partly tested it.

Obiectives

Its **overall aim**, within the project **Media partners Library and School: reading and information literacy NRW** (see p. 289-293) **is the reading development among children and teenagers.**
For reaching this goal, the spiral curriculum has pursued the following specific objectives:

- **Systematic, graduai and steady reading development** in school
- Each school class has a **direct contact with the city library at least once each year**
- **Introduction of different disciplines** into the cooperation between school and city library
- **Teachers' support** in preparing and designing lessons
- **To optimise the possibilities of preparation in the library**
- **To boost the media stock** of the city library **according to the main issues of the spiral curriculum**
- **To develop new forms of partnership** between school and library
- **To create a binding basis** for the cooperation
- **To ensure the transferability** – in terms of **exemplarity** – **to other schools and libraries** in the respective Federal State.

Practice

The spiral curriculum consists of teaching units, it is **spiral-shaped** and comprises **the classes from 1. to 10.**: it set out measures – arising and one founded on the other – to develop reading.
Schools of ali forms are interested: primary, main, technical and high schools.
It includes **many teaching subjects**: German, English, history, geography, biology and physics.
Its **basic offers are:**

- Different ways of conducting classes
- Media presentations
- Media boxes
- Teaching in the library
- Theme rallies.

In the report **two exemplary spiral curricula – for the 1st and for the 2nd degree** respectively – are presented.
With regard to **the single classes** rich and useful **examples from different towns** are utilised, since in the schools of the single Federal States there are different **frame guidelines.**

Detlev Dannenberg - Bardo Herzig - Helene Renger (*et al.*), *Guidelines for the development of teaching units to enhance information literacy*

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Guidelines.htm*
Original website: *http://www.buecherei-warendorf.de/mediapool/2205.doc* (in German)

Date: 8 March 2004

Institutions:

- Bertelsmann Foundation *<http://en.bertelsmann-stiftung.de/index.html>*
  Gütersloh
- Ministry for City Planning and Building, Culture and Sport of the Land Nordrhein-Westfalen *<http://www.mswks.nrw.de/>*
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Helene Renger

Detlev Dannenberg - Bardo Herzig - Helene Renger (*et al.*), *Guidelines for the development of teaching units to enhance information literacy*

Date: 8 March 2004

These guidelines for the **development of IL teaching units**, with two **model researches** about the themes "a class journey" and "preparing a specific work", have been drawn up within the project **Media partners Library and School: reading and information literacy NRW** (see p. 289-293).

Main contents

I. INTRODUCTION

These guidelines should help teachers and librarians develop together teaching units and carry out them with their students.

The key issues are **two model teaching units**:

1. **Preparing, making a class journey and evaluating it**

   It addresses students of middle schools. They prepare together a tour program and some content issues in small groups: they use different print media provided by the library, search on the Internet and consult experts.

   Students present their results before or during the class journey. Afterwards their contributions are reviewed in the form of reports and documented.

2. **Preparing a specific work**

   It is propedeutic to the enhancement of scientific skills.

   In the 11^{th} or 12^{th} class students learn basics of the scientific work: on the basis of reports about subjects freely chosen they can enhance their research skills, learn how to cite scientifically, etc. and train themselves to draw up the chosen issues and successfully present them.

Librarians and teachers should offer their own teaching designs for other classes.

II. PRESENTATION OF THE TEACHING UNITS

- Definition and placement of information literacy within the project Media partners Library and School: reading and information literacy NRW
- Learning objectives of the teaching units
- Didactic guide principle: directing to action
- Digression: Detlev Dannenberg's LIK – The information literacy learning system (see p. [inserire n. di pag. 307-310)
- Methodical guide principle: co-operation between school and library.

III. TWO MODEL TEACHING UNITS

1. Teaching unit: A class journey
2. Teaching unit: Preparing a specific work

MATERIALS USEFUL FOR A MODEL RESEARCH

ADDITIONAL LEARNING OBJECTIVES

A. To know how to formulate the interest, recognise and describe the need for information, formulate queries
B. To know how to search for and find the needed information
C. Skill "To know how to evaluate information, each information medium, and the work process"
D. Skill "To know how to use, manage and present information".

Media partners: Library and School in Warendorf

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Warendorf.htm*
Original website: *http://www.buecherei-warendorf.de/urs.php3?s=2273&cat=373&yourid=none* (in German)

Institution:
Warendorf City Library <*http://www.buecherei-warendorf.de/*>

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Media partners: Library and School in Warendorf

The Warendorf City Library actively attends to information literacy training, considered as a relevant task.
The importance of **reading literacy, media literacy** and **information literacy** is highly stressed, because they are **basic qualifications in the information society.**
All these literacies are strictly connected each other, so that within the project **Media partners Library and School: reading and information literacy NRW** (see p. 289-293) their integrated development has been studied, organised and achieved in order to create media literate students.

The **City Library** and **11 schools of ali forms** – 4 primary, 1 special, 2 main, 2 technical, 2 high schools – **participate in the project.**
Both institutions – school and library – pursue children's and young people's education, each with own specific tasks and objectives.
A **spiral curriculum**, fruit of this collaboration, has been prepared and later polished up: it originally comprised the classes from 1. to 6., then has been developed up to the class 8.
Teaching units, one founded on the other, have been developed in order to guide the classes (primary step) and to bring teaching activities in the library (secondary step).
For each teaching unit a development plan has been prepared together with supplementing materials (media boxes, glossary, research protocols, citation aids etc.).

Rich and detailed information about the **spirai curriculum** are available online in German only.
See:

- **Warendorf City Library: information literacy training** *<http://www.buechereiwarendorf.de/mediapool/2521.pdf>*
- the report presented at the **94thAnnual Meeting of German Librarians - Section 5: 15 March 2005** - Information literacy in a changed education landscape I: after Pisa – New co-operations between school and library: **Birgit Lücke,** ***"Warendorf Learning Workshop". Schools and the city library build together bridges for a new learning culture.***

The module system of the Warendorf city library: step by step towards the goal

Eight steps or modules for developing media literacy

1. arouse motivation to read
2. enhance motivation to read
3. develop reading literacy
4. enhance reading literacy
5. **develop information literacy**
6. **enhance information literacy**
7. develop media literacy
8. enhance media literacy

Further information and details about this **module system**, ***The working way - General development and realisation of the spiral curriculum***, as well as clear and useful examples are available in German only.

See the report presented at the **94thAnnual Meeting of German Librarians - Section 5: 15 March 2005** - Information literacy in a changed education landscape I: after Pisa – New co-operations between school and library:
Birgit Lücke, *The module system of the Warendorf city library : step by step towards the goal.*
Rich information about **the whole IL activities of the Warendorf City Library** can be found in the report presented at the **94thAnnual Meeting of German Librarians - Section 5: 15 March 2005** - Information literacy in a changed education landscape I: after Pisa – New co-operations between school and library:
Birgit Lücke, *"Warendorf Learning Workshop". Schools and the city library build together bridges for a new learning culture.*
Further details about all educational offers of the Warendorf City Library are available in German only on **the school portal** (see: **"Lernangebote"** - Learning offers).

Information literacy training: core issues of the spiral curriculum

Class 1st
General learning objective: Books are fun! – Meeting the library

Class 2nd
General learning objective: Books are fun! – Library organisation and use
How can I find books in a library and how can I borrow them?

Class 3rd
General learning objective: Library organisation and use (deepening)
How to find and search for books in the city library (catalogue use)

Class 4th
General learning objective: Summarising recapitulation about the organisation and use of a library
What I should know about books and library?

Class 5th
General learning objectives:
- Deepening reading literacy
- Using a library
- Integrating new pupils coming from the surrounding areas.

How to find and borrow books in the city library (summarising recapitulation)

Class 6th
General learning objective:
Developing media literacy
Pupils learn:
- How to find relevant information in a text; how to structure and summarise a text.
- How to plan and write reports.
- How to search for bibliography and use it.

The concept of "evaluation criteria for sources" is introduced and explained.
How to find and search for information through the city library.
As from the 6th class, information evaluation begins. Its importance is stressed.
Media as books and Internet are presented comparatively and the first experiences with the various information strategies are provided to the pupils.

Class 7th
General learning objective:
Developing media literacy (within a project)
Students learn:
- How to read a text and restate textual concepts in their own words in order to satisfy a specific demand.
- How to establish interrelationships among different concepts and disciplines.
- How to prepare a report and to present the performance results.
- How to participate in an Internet research.
- How to cite and to prepare a bibliography.

The following concepts are explained and put into practice:
Citation / Bibliographies / Databases / Search engines / United catalogues / Distance loan / Evaluation criteria or Internet sources
How to search for, find and evaluate information – testing phase
In the 7th class the key issue is the evaluation of the various information sources. Here the importance of the previous work in the primary school becomes clear.

Class 8th
General learning objective:
Developing media literacy
Students learn:
- How to conduct independent searches on the Internet and in the library on the basis of an assigned theme.
- How to use found information for the planning and creation of a product or performance (report, presentation)

Correspondent concepts:
Special databases / Subject sources
Use of databases and other Internet sources (digital library) – Planning phase
In the 8th class the students revise and deepen the arguments on the basis of the teaching themes, which they should carry out in homeworks, reports and oral presentations. The importance of the self-directed and -paced learning increases.

IK - The Information Literacy Project of the University of Constance Library

English outlines in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/ik.htm*
http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/ik_II.htm
Original website: *http://www.ub.uni-konstanz.de/ik/project.htm*

Start Date: 2003-2005
End Date: 2005-2007

Institution:
The University of Constance Library <*http://www.ub.uni-konstanz.de/eng/*>

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IK - The Information Literacy Project of the University of Constance Library I

The **Information Literacy Project** was conceived with the goal of developing and implementing a standardized education concept at the **Library of the University of Konstanz.**
It is a **two-year project** and is being jointly financed by the **University of Konstanz** and the **Ministry of Science, Research and the Arts of the State of Baden-Württemberg,** Germany.
The project is to combine all previous initiatives and support the subject librarians in the planning and implementation of their courses.
Central to the project is the **development of a modular education program for the training of information literacy.**

Goals

The main objective of the project is to **develop a model course in information literacy structured using a modular system,** which can be taught in one semester.
Learning goals will be set and the content of the course will be formulated with respect to new teaching methods.

Overview of modules

1. Library as spot of scientific information
2. Search strategies, entry to a theme, catalogues
3. Bibliographies 1
4. Bibliographies 2
5. Bibliographies 3
6. Internet
7. How to manage and organize a bibliography, how to publish the own works, conclusion.

Target group: university students
Level: basic and advanced

The course consists of individual units, which can be taught individually and separately when needed. Curricula, learning objectives, and appropriate teaching methods and materials will be developed for each unit of the module.
The advantages of such a modular system are the following:

- The subject librarian is relieved from some of the conceptual work and course preparation.
- Materials and handouts will be provided, much as they would be with a text book, if the specialist does not wish to use his/her own materials.
- Depending on time constraints, certain modules can be left out or a course can be supplemented with "expert modules" (e.g. on the topic of archival research in the subject of History).
- The curriculum can be better updated and presented in a standardized manner.
- Through the parallel development of appropriate evaluation tools, a comparison of several courses and teaching methods will be possible.

In addition to the modules developed for the classroom, **e-learning components** will be developed for the courses. In this manner, tests and exercises can be posted making it possible for students to prepare and review the subject matter.
With the assistance of evaluation tools such as questionnaires and individual interviews, as well as class discussions, individual modules and the overall concept will be regularly evaluated and further developed.
The modules which are being developed and tested as part of the project are not only intended for use in Konstanz.
The lesson plans and materials will therefore be made available to other libraries for further use.

E-learning

A list of publications is available **in German** only.

IK - The Information Literacy Project of the University of Constance Library II

Since Autumn 2005 the Library at the University of Konstanz has carried out a project on information literacy for advanced students, graduates, department staff, university teachers, postdocs, lecturers etc.
The **German Research Foundation** (DFG - Deutsche Forschungsgemeinschaft) which funded the project on information literacy took up its work in January 2006.
The project is aimed at the **training and instruction of teaching personnel and advanced students (graduates)**.
Its goals are not only **to explore und invent new possibilities of training** of a certain target group but **to evaluate already existing approaches**. These existing projects will be checked for possible modification, adaptation and **customisation for the German and (more general) European university libraries**.
One of its main goals is **to establish an interdisciplinary and international link to Universities worldwide** for collating and comparing different approaches to information literacy for an advanced audience.

LIK - The information literacy learning system

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/lik.htm*
Original website: *http://www.lik-online.de* (in German)

Start Date: 1998

Institution:
LIK Lernsystem Informationskompetenz <*http://www.lik-online.de/*>

Barmstedt

Address:
LIK Lernsystem Informationskompetenz
Großendorfer Straße 32b
25355 Barmstedt

Contact person:
Detlev Dannenberg

LIK - The information literacy learning system

The LIK learning system is a conceptual basis for **co-operation between schools and libraries** in methods and goals.
It is the core of **the project-oriented approach**, based on **constructive and subject-centred pedagogy** and on the use of individual thematic problems or interests as starting points to trigger processes of learning. So **the learning of competencies of information literacy can be integrated with contents of other fields.**
The participants of courses are not obliged to learn skills in information literacy under traditional conditions of structured teaching. The teacher assumes a passive role, restricting himself to assistance on demand. The participants have to be active and are mainly responsible for their strategies and their results. The most important work within this approach has to be done in advance, or in the background, by developing conditions favourable for learning and communicating with the participants on their way towards solving their problems.
More information on this approach can be found in Dannenberg, Detlev, *Wann fangen Sie an? Das Lernsystem Informationskompetenz (LIK) als praktisches Konzept einer Teaching Library*. "Bibliotheksdienst", 34 (2000), No. 7/8.
See also: **Benno Homann, *A new task for German libraries: teaching information literacy.*** In:
***Information Literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union*, edited by Carla Basili. Roma, Italy : CNR, 2003, p. 114-115.**

The **LIK system** is **a system to develop information literacy within the libraries** for life-long learning.
It assists trainers in information literacy teaching with the support of information specialists.
Thanks to rich didactic offers it gives libraries the possibility to become truly **"teaching libraries".**
It supports learners to develop their information skills and competencies.

LIK plan

The **LIK pian** includes:

1. an **IL model** - The LIK information literacy model (IK Modell) – represented in form of a tetrahedron – has **four sides**, that in the process of the scientific work are not linearly ordered in a sequence, but are **disjointed**:
   - to recognise and describe the need for information
   - to find information
   - to evaluate information, information media and working ways
   - to arrange and present information.
2. a list of **learning objectives**
3. a **co-operation model** (information literacy for life long learning through libraries)
4. **three principles**
   - Orienting participants
   - Focus on the themes
   - Activating methods

5. **six components**
   - Work sheets
   - Team work with mutual presentation
   - Model research, model report, model evaluation
   - Buddy-system (participants help one another), help through tutor with individual problems
   - Individual search exercise, individual report
   - Performance tests.

LIK services

- **Coaching**
  Consultancy and support in planning, development and implementation of different educational initiatives, in-house specialisations, training.
  Experts support the planning, realisation and evaluation of every project devoted to teaching information literacy; they also support the wide range of training activities currently provided by the libraries.
  - **Fighting fit for a specific work**
  - **LIK in the deepening lessons (LIK-VU)**
- **Conferences** about information literacy and its development
- **Specialisations, vocational training and professional development**
  Didactic and methodical contents for teachers and multiplicators in order to plan, realise and evaluate IL training activities.
  Details about three courses for public and scientific librarians are available:
  - **Learning instead of teaching** – Activating methods in adult education within information training (methodical course - 2 days = ca. 20 teaching hours)
  - **Well planned means half done** - The organization of an information literacy training session (didactic course - 2 days = ca. 20 teaching hours)
  - **Active learning and good planning** – how a single library or a library system can deliver effective in house training sessions (compact course - 3 days = ca. 30 teaching hours)
- **Workshops**
  Experiences exchange with the support of experts about information literacy issues.

LIK projects

LIK is involved in a variety of **co-operative projects among libraries, universities and schools.**

- **LIK in universities**
  The development of the information literacy takes place through the **university libraries.**
  Target groups: university students and other members of the university.
  It is **integrated into the curriculum.** The performance assessment is preferably achieved by libraries.
- **LIK in schools**
  The development of information literacy takes place through the **libraries.**
  Target groups: students and other members of the school (usually a high school).
  It is **integrated into the curriculum.**
  The performance evaluation is preferably achieved by libraries, the performance assessment by teachers.

- **LIK in professional life**
  In order to develop information literacy there are **only few concrete projects. Specialisation and professional training for librarians** are offered within LIK.
  There are two **training units for library staff**:
  1. How does the new online distance loan work?
  2. The services' performance.

Tutorials

- **Der Schlaue Det (The Sly Det)**
  An interactive library-skills-online tutorial to enhance library skills as a key qualification
  It is an ideal instrument to improve this key skill because it gives students the opportunity of acquiring missing knowledge by using the tutorial in a flexible way.
  The tutorial offers the user additional instruments for learning, e.g. questions for auto-control and means to communicate with the librarian as an expert of information literacy.
  Its main sections are:
  - Introduction
  - Organisation
  - Library catalogues
  - Bibliographies
  - Learning check (quick test; research exercise; evaluation)
  - Glossary
  - Local search engine.
- **How to write a bibliography according to DIN 1505 – Part 2 and 3: different styles**
  This online tutorial addresses people who want to write a bibliography for a publication, according to DIN 1505 standards.
  It is a tool to overcome some restrictions of the original styles.
  It bases itself on the use of BibTEX. The BibTEX database, which contains bibliographic information, can be used according to US standards or DIN ones.
  The tutorial examines:
  1. the **various types of publication** (ex. gr. article, book, booklet, proceedings), each with **its own citation requirements and features** (*entry types*);
  2. the different citation styles (*styles*).

BibTutor

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/BibTutor.htm*
Original website: *http://www.dfki.uni-kl.de/KM/bibtutor/content/e14/index_eng.html*

Start Date: 1 November 2004
End Date: 3 April 2007

Institution:
DFKI GmbH - German Research Center for Artificial Intelligence <*http://www.dfki.de/web/*>

Kaiserslautern

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BibTutor: Development of an electronic tutor system for research in information sources

The **teaching of information competence** in connection with the **navigation of information sources** is the goal of the project BibTutor, **started on 1 November 2004** and with a **duration of 2 1/2 years.**
This project is supported by the **Federal Ministry of Education and Research (BMBF)** coordinated by the **German Research Center for Artificial Intelligence (DFKI)** in Kaiserslautern.

Courses teaching competences in the field of information retrieval, as offered by scientific libraries, have proved inadequate for several reasons.
BibTutor pursues here a completely novel concept. Navigation tools for information sources are supposed to be expanded so that they integrate closely with the traditional search such that they support the selforganized acquisition of knowledge and put the traditional search into the current context of the information requirement.
The planned BibTutor system is supposed to help the library visitor during the selection of a suitable information sources, as selecting among the great number of the available catalogs and databases can be a problem. During the actual research in the information sources the BibTutor system takes the place of a mentor which gives concrete recommendations - for example, if an inquiry supplies too many, too few, or even no answers, or the result does not otherwise correspond to the user's expectations. This is realized with the usage of modern text mining technologies which derive, for example, semantic similarities between ad-hoc search keywords and the default keywords in the information sources in a stand-alone way.

Besides DFKI and the company brainbot technologies, **the libraries of the Technical Universities Kaiserslautern, Hamburg-Harburg,** and **Darmstadt**, as well as **Heidelberg University**, are involved as idea suppliers and customers of the BibTutor system.

Objectives

- **Adaptation to the user's individual demands**
- **Assistance concerning the user's current research problem**
- **Furtherance of the user's expertise in literature research.**

The advices given are illustrated and explained transparently. Still, BibTutor does not completely relieve the user from the current problem.
In contrast, BibTutor aims at "helping users help themselves" in order to further their expertise.

The system supports the user specifically where problems usually occur:

- **in the choice of adequate information sources** (restriction of the research to suitable data pools)
- **in the development of successful strategies** during the research process.

Functional concept

Two components:

- Context acquisition
- Enquiry assistant.

K³ - Cooperation, Communication, Information Literacy

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/cooperation.htm*
Original website: *http://www.inf-wiss.uni-konstanz.de/k3_projektbeschreibung/index.html* (in German)

Start Date: September 2002
End Date: 31 December 2006

Leader institution:
Department of Computer and Information Science – Konstanz University
<http://www.inf-wiss.uni-konstanz.de/start_e.html>

Konstanz

Partner institution:
DLR Projektträger
Neue Medien in der Bildung + Fachinformation (project executing organisation)
<http://www.dlr.de/>

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K³ - Cooperation, Communication, Information Literacy

Knowledge management via co-operative, distributed production and acquisition of knowledge to shape conceptual information skills by using a range of different information resources

It is a project of the **Department of Computer and information Science** at the **Konstanz University,** within the **Federal Government's Action Program "Innovation and jobs in the information society of the 21st century".**
In this project **innovative, open software** is to be made available, with which **the acquisition of information skills in higher education can be supported.** This will be done by means of the distributed and co-operative creation and learning of terminological and encyclopaedic knowledge including external information sources.
Its **main issues** are:

- **To promote students' information literacy** setting up **individual and co-operative teaching-oriented knowledge platforms;**
- **To create a conceptual and organisational framework for higher education-specific knowledge management activities,** where co-operative distributed forms of production and acquisition of concept-oriented knowledge can be developed considering the different information resources;
- **To create a rugged open software system,** which can be used by HE students;
- **To design, implement and utilise an evaluation schema,** thanks to which the learning success and the acquirement of information skills through co-operative distributed learning/teaching forms can be assessed and measured.

The following areas are to be successively developed and refined:

- Design, curricular and organizational basics
- Communication management
- Procedures for managing resources and links
- Matching paradigm retrieval
- Adaptive visualization and presentation components
- Transaction components and system of credits
- Testing and evaluation.

As first **education-oriented application examples** a discursive curriculum unit, ***Information ethics***, and a methodical unit, ***Information retrieval***, are chosen.
K³ contributes to overcoming the serious IL deficiencies found out and highlighted by the *SteFi study* (see p. 332-336).
Above all, within this project many **education-oriented innovative components** have been developed; among them there are: search/navigation tools; transaction components and credit system; communication management tools; versions, link and text management tools.

E-learning platform

K³ provides a platform in the context of knowledge management to support collaborative knowledge production in learning environments.
The underlying hypothesis states that collaborative discourse conciliates information as well as communication competence in learning contexts.
The **collaborative, communicative paradigm of K³ is implemented by asynchronous communication tools** as a means of constructivist learning methodology.

This **constructivist learning model** is augmented with **collaborative properties.**
The system features of the virtual collaborative e-learning system K^3 support its typical **didactic approach of combining constructivist and instructional element.**
K^3 courses, mainly offered since 2004 at the University of Konstanz, follow the **blended learning model.**
K^3 collaborative discourse work is organized in **virtual groups.** All group members have to choose a role (moderator, summarizer, etc.) for a certain period and their role performance is part of their evaluation.
Discourse takes place in an electronic (asynchronous) forum. Each contribution/comment must be specified according to its discourse function. These specifications structure discourse and allow selective retrieval of discourse objects. Students are encouraged to augment their contributions informationally by reference objects. A graphic interface facilitates navigation through complex discourse structures and makes them transparent.
The technical basis of K^3 is an open source, object-oriented client-server system for the management of the different types of K^3 data.

Further information about the **e-learning platform K^3, its didactic background, the main architecture of the K^3 System and its first learning outcomes** is available **in English** in the paper presented at the World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, Vancouver, October 2005:

Rainer Kuhlen - Joachim Griesbaum - Tao Jiang - Jagoda König - Andreas Lenich - Peter Meier - Thomas Schütz - Wolfgang Semar, ***K^3 – an e-Learning Forum with Elaborated Discourse functions for Collaborative Knowledge Management.***

Rich and useful information is available at:
http://www.inf-wiss.unikonstanz.de/k3_projektbeschreibung/docs.html **(papers, reports, various materials** almost all in German).

DISCUS (Developing Information Skills & Competence for University Students)

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/DISCUS.htm*
Original website: *http://www.tub.tu-harburg.de/index.php?id=418#419*

Start Date: March 2003
End Date: February 2005

Institution:
Hamburg University of Technology
University Library - TUB HH (leadership) <*http://www.tub.tu-harburg.de/1.html*>

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The project is supported by
the E-Learning-Consortium Hamburg (ELCH) <*http://www.e-learning-hamburg.de/*> via the Multimedia-Kontor Hamburg (MMKH) <*http://www.mmkh.de/*>.

DISCUS (Developing Information Skills & Competence for University Students) - a driving license in information literacy

Target groups: university students, scholars, faculties
Level: basic, advanced and specialised

The primary local aim of this project is the construction of an **online tutorial** to convey information literacy in the **engineering sciences** (especially in **process engineering** and **biotechnology**) as well as **economie sciences**.
In addition to **a module on navigational and retrieval strategies as part of searching information systematically, further modules on electronic publishing** (consulting authors: writing, citing, formatting) are planned plus **a module on social aspects of information systems (intellectual property, copyright, patents, information policy).**
A general global aim for Hamburg is the **promotion of information literacy activities for graduates** of the universities of Hamburg and the coordination of the resources in Hamburg.
The **TUB HH - University Library of the Hamburg University of Technology** wants to reach the following goals:

- **The improvement of the usage of electronic, subject-specific information in the universities of Hamburg** which leads to more successful research results and final examinations as well as to better possibilities for application of Hamburg's universities' graduates
- **Increasing the awareness of information competencies for students, faculty and scholars**
- **Creation of a web-based bilingual (German, English) learning tutorial for information literacy in engineering**
- **Realization of a structured, curriculum-based and -integrated learning module on information literacy** which can be used independently of time and space
- Completion of this pilot project at the TUHH **for ali universities of Hamburg**
- **Bundling and coordination of competencies in mediating information literacy in Hamburg's universities**
- **Integration of library systems and services** in e-learning activities and learning management systems **of Hamburg's universities.**

Learning Objectives

A constructivistic-didactic concept serves as a basis to convey information literacy in this project.
It is important not only to convey knowledge or abilities but to convey the varying point of views of observers. Reflexion about the own learning process is necessary, that means **a turn towards the individual.**
Didactic tasks are supporting, consulting, orientation, change of attitudes, improvement of critical thinking as well as cooperation through the electronic learning environment.

- Promoting the awareness of the potential of electronic reference databases and other sources of information for the particular information needs of the customers
- Development of the ability to locate appropriate and qualified tools for searching information
- Realization of the large offering of scholarly media for information
- Developing the ability to select the sources which meet the own demand for information in research, study and at work

- Self-dependent exploration of the practical handling with text-oriented databases of all kinds
- Promoting critical competence.

After completing **the tutorial** the learners will be able to explore any user-defined database autonomously to get the most out of their inquiries.

Learning Contents

The **comprehensive dimensions of information literacy** will be made clear through the planned **modules of DISCUS**:

- **DISCUS 1**: Searching and provision of information and literature systematically, navigation and retrieval strategies
- **DISCUS 2**: Evaluation of information, "critical skills"
- **DISCUS 3**: Organization of information (document management)
- **DISCUS 4**: Presentation of information (rhetorics, oral skills, graphical treatment, ...)
- **DISCUS 5**: Electronic publishing (consulting authors: writing, citing, formatting)
- **DISCUS 6**: Social aspects of information systems (intellectual property, copyright, patents, information policy, freedom and dependency, security, cultural heritage).

Concretely the module **DISCUS 1** has been realized during this project. Subject-specific examples from **chemical engineering** and **biotechnology** (including facts or substances databases) have been integrated. Further subject-specific modules can be added over the course of the project (e.g. **economic sciences**).

On a general level - in addition to an orientation about the information market in general - modules on **searching information and literature systematically** and on the **survival guide to explore databases** have been built.

All contents have been offered in German and English.

FIT for Psychologists - Subject-oriented Information Literacy Training

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/FIT_Psychologists.htm*
Original website: *http://www.ub.uni-heidelberg.de/helios/fachinfo/www/psycho/psyik/*
(in German)

Project Partners:

- University Library of Heidelberg <*http://www.ub.uni-heidelberg.de/Englisch/*>
- ZSW (Centre for Centre for Study Counselling and Continuing Education) <*http://www.uni-heidelberg.de/studium/beratung/zsw.html*> - Key Competencies Section <*http://www.uni-heidelberg.de/studium/SLK/startslk.htm*>

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FIT for Psychologists - Subject-oriented Information Literacy Training

Target group: Psychology and Pedagogy students (undergraduates)
Level: basic and advanced

Time and effort estimated to successfully complete it: 12 months.
This **e-learning-course is an introduction to information literacy for students of Psychology and Pedagogy.**
In this **online tutorial the texts** are completed with **images and screen shots didactically prepared**, in order to clearly illustrate the contents.
The aim of this project is **to teach Psychology and Pedagogy students (undergraduates) the basic information competences.** They should be able to effectively use scientific information of this subject for an active and self-directed learning through practical and concrete problems.
FIT provides **through a web platform contents and skills**, whose deepening and supervision are carried out by tutors and mentors. It **can be integrated into the psychology and pedagogy courses**, but **can also be attended independently**, in the self-study.
FIT is based **on the close cooperation** between the **University Library of Heidelberg** and the **ZSW (Centre for Study Counselling and Continuing Education) - Key Competencies Section.**
The educational nucleus of **PSYIK – Information Literacy for Psychologists** is the **Dynamic Model of Information Literacy (DYMIK)**: through DYMIK the phases and elements of information processes are organized and managed.

Learning modules: main contents

- An overview of where and how psychological information and literature are located and organized
- The ability to efficiently and effectively use catalogues, search engines and bibliographic databases
- The ability to critically reflect about the information processes
- The ability to publish the own research results.

The elements of FIT are:

- The learning story of Steffi, a Psychology student in her first semester
- Contents presented by UBI, the virtual tutor
- Self checks to test individual learning progresses
- Deepening exercises and for external support
- Glossary in order to illustrate and deepen some concepts
- Useful relevant links.

Useful information about **the project, its structure and aims** can be found at:
http://www.neuemedien.uni-hd.de/projekt18.html (in German).
Experience made with WebCT are published in Homann, Benno, *WebCT als E-Learning-Plattform bei der Vermittlung von Informationskompetenz für Psychologen*. "Bibliotheksdienst" 37 (2002), No. 11.

LeiLa Project: Lifelong learning in processes of vocational education for furthering of disadvantaged groups

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/Leila.htm*
Original website: *http://www.dream-job.org/bp/DE_LeiLa_Bremen_eng.htm*

Start Date: April 2000
End Date: February 2005

Institutions:
- University of Bremen. Institute Labour and Economy (IAW) *<http://www.iaw.uni-bremen.de/index.php?SPRACHE=en&SEITE=pages/welcome.php>*
- ABC - Employee's Association Bremen *<http://www.arbeitnehmerkammern.de/>*

Bremen

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LeiLa Project: Lifelong learning in processes of vocational education for furthering of disadvantaged groups

1. Organisation

The project LeiLa - Lifelong learning in processes of vocational education for furthering of disadvantaged groups is coordinated by the IAW - Institute Labour and Economy at the University of Bremen in cooperation with the "Centre for Education and Work" of the Employee's Association Bremen (ABC).
Additional partner institutions are two vocational schools in Bremen.
LeiLa is part of the pilot study "lifelong learning" of the BLK - Standing Commission of the German Government and the German Federal States for Educational Planning and Research Promotion.
The project is promoted by the Federal Ministry of Education and Research, by the senator for labour, women, health, youth and social affairs Bremen, by the senator for education and science Bremen and by the European Social Fund (ESF).

2. Project structure

The pilot-project LeiLa started in April 2000 and runs until 31.12.2004.
Its main aim is **to develop concepts of lifelong learning for disadvantaged young people.**
The project can be divided in **three bigger steps or phases:**

- **Phase 1: Preparation for vocational training**
  It is designed for young people in preparation for an elementary school leaving-examination and following vocational training.
  The first step was an analysis of the main deficits of the disadvantaged group of young people concerning attitudes and previous experiences towards learning.
  Following the group of young people was trained in basics of use of the Internet as a basis for subsequent autonomous enquiries of companies and classes of business plus exercises for self-organized communication with providers of practical training places.
- **Phase 2: External supporting actions accompanying vocational training**
  In order to improve out-of-company approaches of training and professional education actions, didactical innovations for mediation of key qualifications concerning use of media and methods are supposed to be developed and tested. Apprentices are to be trained in self-regulated collection of job-relevant and additional comprehensive information and enabling them to use new media consciously (e.g. e-commerce, e-banking, e-government).
- **Phase 3: Models for vocational further training**
  It develops models for vocational further training of formerly disadvantaged persons in order to provide strategies for further development of their professional competencies. The formerly disadvantaged group of young people and adults are supposed to strengthen their already acquired professional competencies with recourse to potentials of innovation information and communication techniques.

Support of working process insertion by the three phases of Leila Project
Regarding **a model of working process insertion**, the three phases of LeiLa project each supports different aspects of working socialization:
Phase 1 stresses **preparation and orientation for professional training.** It supports ***recruiting selection*** and ***job insertion*** **in an apprentice-centred way.**
Phase 2 provides **external support during apprenticeship.** LeiLa emphasizes the meaning of **key qualifications and new media competencies.** These key competencies

of modern working life can often not be provided by conventional in-company training and vocational schools. Phase 2 thus supports ***formal learning*** by additional ***tutoring*** and ***practices***, while training of trainers is not provided by this project.
Finally, in phase 3 of Leila project former apprentices are fully employed as organisational members in a company. This phase thus regards external support of ***human resources development*** within working organisations.

3. Theoretical Framework

Specifics of training new media competencies

The competence to use a medium does not automatically mean a sophisticated handling of information. As a consequence it is not enough to train pure media techniques when aiming to improve media and learning competencies.
Koch (2002) specifies following components of a **competent use of the Internet**: ***the ability to abstract and synthesize information, the competence to differentiate, select and evaluate available data, the competence to communicate professionally and the competence to plan and systemize inquiries.*** Additionally two basic competencies have to be considered: **the ability to read and write correctly** and **to understand and produce graphics and charts** and the sufficient handling of necessary software.
Although experiences in new media within the target group of disadvantaged young people are lower, there are anyhow several chances to use these media for training purposes with these groups. In addition to the mentioned motivational advantages and the possibility to compensate deficits, their use allows **activating, self-regulated and action-oriented ways of learning**, brings forward communication and cooperation skills and enables learning "by the way" (Koch, 2002).

4. Methods

First Phase

In order to support vocational choice and search for apprenticeship places, **four modules** have been used:

1. Mediation and trying out of basic knowledge for doing internet-searches and e-mail-communication (exemplified by the search engine for craftsmen Bremen)
2. Independent testing of internet and e-mail (by an inquiry: What is a call-centre?)
3. Provision and transfer of information via the internet (for purpose of autonomous acquisition of a practical training place)
4. Integrated inquiry of information about the company proving the practical training place by multi-level communication (e-mail-dialogs with tutors and learning group)

The individual modules have been carried out in small groups of from 5 up to 8 participants. Altogether 35 young people took part in this stage of the project (29 finished).

Second Phase

At the beginning the project "the own website" was proceeded. Every participant should build up his own website, where he introduces himself, his future profession, contents of apprenticeship and private interests and hobbies. There are **four modules**:

1. Acquisition of knowledge about build-up of websites (by content analysis of different web-sites)
2. Selection of relevant individual and profession-related information for presentation on the website (by reflection, inquiries and group discussions)
3. Acquisition of knowledge and skills for construction of an own website (technical and content-related)

4. Development of competencies for intermediation of skills to others (by creation of a instruction manual for building a homepage).

This stage of the project premises pre-knowledge and experiences with the Internet and related communication techniques. Supervision effort is higher than in the first phase and it is recommended to organize work in small groups of maximum 8 to 12 participants. Every participant should be able to work alone at a personal computer. Due to high need of introduction, preparation, training and testing the whole first year of apprenticeship was scheduled for the project, whereby half of a day up to one day per week was worked on the project.

5. Evaluation

The work in the projects with young people in the stage of vocational orientation and preparation was set off with an analysis of status and demand concerning attitudes and needs in regard to learning.

Interviews with 69 young people on the step between general and vocational education have been carried out. An instrument of questioning was developed in order to measure attitudes of disadvantaged young people towards learning and vocational education and to clarify their self-estimation of own deficits, expectations regarding the project and status of their professional orientation.

As instrument of inquiry was chosen a questionnaire, consisting of 7 main subject areas:

- Personal data
- Experiences in school (learning, subjects, learning conditions)
- Expectations towards own scheme of life, apprenticeship and future profession
- Expectations towards this project action
- Individual methods / habits of learning
- Two tasks from the context of career choice and search for training places
- Questions for media competencies and use of the Internet.

Standardised questions were evaluated quantitatively where possible, open questions were analysed qualitatively or coded and quantified.

In order to assess possible effects of developed and implemented didactic strategies, longitudinal analysis during the several sections of the project was arranged. Therefore interviews of the initial survey were repeatedly carried out with respective participants of individual project parts. Additionally observations of trainers contributed to the evaluation process.

6. Results

Longitudinal analysis First Phase

The group of 29 young people having passed through and finished the vocational preparation training again have been interviewed. Questions from the first interview were applied again and observations by trainers throughout the group phases were included to explore developments that can be ascribed to actions of the project approach.

Several effects have been measured indicating developments that can be ascribed to the didactical approach of learning with and through new media use:

Enhancement of subject- and job-relevant key qualifications

By the way basic skills like literacy have been trained, previous deficits could be reduced through motivating interaction with net-based information and communication media.

Self-regulated learning

The rate of young people favouring active and autonomous way of learning increased anyway to one third of participants of the preparation project.

Methodical competencies
Beside extension of information relevant techniques other methodical competencies like analytic and targeting thinking and the ability to differentiate and evaluate have been improved.

Social competencies
Communicational competencies, work in teams and autonomous learning independent from a teacher have been trained within the project.

Positive attitude towards learning
Negative attitudes towards learning because of excessive demands or lack of interest not emerged anymore after the project. Also the proportion of participants, believing to learn in response of external pressures, decreased from 15 to 10 percent.
A *better sovereignty in solving complex tasks, grown interest in media use for learning* could be observed and *advancement of chances not to miss connection to other educational groups* and a *reduction of the digital gap* are implicated.

Longitudinal analysis Second Phase
Construction of an own homepage means active work with text-based material and enables to train basic key qualifications. These not primarily intended effects are perhaps more important for the target group than learning of new media techniques per se.
The complexity of the task additionally demands an at least minimum structured way of working. Making of notices, outlines is necessary and gets demanded by the task itself. Important progressions in the area of learning-relevant methodical competencies can be achieved.
Increase of media competencies has been remarkable throughout the project. Comprehension of basic structure of computer programs and modern PC applications could be acquired and harnessed for future purposes in school or professional context.
New constellations of groups and roles in comparison with school classes could be built within the project. Individuals could be integrated in teams, get the chance to act as role models or even take over guiding functions. So old structures could be broken open and motivating advancement of learning in teams occurred.
Not only participants, also trainers and pedagogues gained new confidence in advancement of disadvantaged groups. Initial scepticism and fear of excessive demands got lost more and more as soon as first signs of success appeared.

7. Added Value

Innovating traditional training systems
Due to constant changes in professional world today further education has to go beyond institutionally organized education. Individuals are demanded to regularly adapt and extend their qualifications and portfolio of competencies.
The potential of the Internet as a source of information and learning takes over a increasing role. The pure use of modern communication technologies does not predict the increase of knowledge or skill. A minimum ability of self-regulated learning is necessary, which is in low gear especially within the group of disadvantaged young people.
The project LeiLa is an example how to overcome this obstacle.

Adoption of modern didactical methodologies
Theory of self-organized or self-regulated learning is a part of modern constructivistic theories of learning. The main difference to other cognitive theories is the amount of freedom the individual learner is granted and seen as wholesome.
If individuals don't possess the prerequisites to learn in a self-regulated way, the trainer has

to introduce and pre-structure contents and methods by reducing the amount of self-regulation step by step afterwards. Such a procedure is performed within the LeiLa-project.

Better access to training paths for disadvantaged groups

Currently the main problem of the German system of apprenticeship is the deficit of apprenticeship places for young people. Some free training places can only hardly be occupied, because of a lack of well-educated enough aspirants. Both problems come especially hard for disadvantaged groups. Better access to training paths can be on the one hand be established by creation of a greater number of job and training places, a task which has to be solved by policy and economy first of all. On the other hand it can be attempted to provide disadvantaged groups better chances in competition for training places. In LeiLa this is done by mediation of the most important key qualifications in modern job world, methodical, social and media-related competencies.

Advancement of lifelong learning and sustainability

A concept of lifelong learning should integrate a set of integrated policy initiatives designed to facilitate a higher level of general education; an mix of employment-linked vocational training; the creation of bridging courses and accreditation arrangements between education and training provider systems.

As a consequence the present vocational training system has to be supplemented by projects like LeiLa, providing opportunities for informal learning. In the next step, formal institutional learning supply and additional informal opportunities have to be integrated, both on the level of training paths and credit systems plus on the conceptual level concerning elements and models implemented successfully.

The three-phase concept of LeiLa realises the concept of lifelong learning even on an individual level. Vocational preparation, apprenticeship and further training are integrated in one theoretical and methodical framework providing a sustainable training supply for a group of disadvantaged young people.

For the **Project's home page** see: *http://www.iaw.uni-bremen.de/leila/* (in German)

LOTSE: Library Online Tour & Self-Paced Education

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/LOTSE.htm*
Original website: *http://lotse.uni-muenster.de/* (in German)

Start Date: 1 October 2000
End Date: 31 March 2003

Institution:
University and State Library of Münster (leader) <*http://www.ulb.uni-muenster.de/*>

Partners
Binary Design GmbH <*http://www.binary-design.de/*> (programming)

Libraries:
- University Library of Dortmund <*http://www.ub.uni-dortmund.de/*>
- University Library of Bochum <*http://www.ub.ruhr-uni-bochum.de/*>
- University and City Library of Köln <*http://www.ub.uni-koeln.de/*>

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LOTSE - Library Online Tour & Self-Paced Education

The LOTSE navigation and training system effectively helps scientists find, use and evaluate field-specific information sources, both in conventional as well as electronic forms.
The LOTSE structure has been devised to satisfy both field-specific and interdisciplinary demands.
It didactically explains and points the way to sources: LOTSE leads the user to the source he needs and tells him when and with what purpose he can use it.
LOTSE doesn't need so much time as other training programmes to perform. The system provides a high customisation based on users' interests and previous knowledge.

Target groups

Students - LOTSE helps optimally learn scientific working techniques. Besides information search and provision, through LOTSE they can learn scientific and professional infrastructure.
Scientists and researchers
Librarians - LOTSE supports them in transmitting information literacy within libraries (especially through guidance and training).

The LOTSE project outline

The following **content and technical features** derive from its aims and mission:

- Subject orientation
- Interdisciplinarity
- Scientific work techniques
- Learning work techniques
- Didactic structure
- Training function
- Integration of all information sources
- Self-directed and self-paced learning
- Amusing, clear and easy to use
- Co-operative development.

Content structure

It is applicable to every field.
The steps of the scientific work are pointed out in the modules. Activity-oriented information interests act as learning and navigation paths. The modular structure and its contents are clearly described in the picture.
Various learning paths offer learner users a high customisation level.
The **seven paths** consider **the knowledge interests**:

- **Primary** (red-marked): Literature search – Factual search – Current contacts (chats, mailing lists, newsgroups, newsletters etc.) – How to find and cultivate contacts.
- **Secondary** (grey-marked): How to learn and search – How to obtain literature – How to use a library.

The Project phases

LOTSE has been developed in **two phases:**

- **The first phase (Autumn 2000-Spring 2003)** was employed for the project **development**: the technical and content structure was built. **Its highly flexible modular structure** was developed.

The modules were prepared first for **Medicine and Pedagogy,** then for **Medicine and Naturai Sciences,** for the **Humanities and Social Sciences;** finally, for **History.**

- **The second one started in August 2003** and has been employed for a **co-operative enlargement;** two new fields have been added: **Physics and Electro-technics.**

At the end 2003/early 2004 LOTSE covers **five scientific fields** and involves **four universities.**

The project should be enlarged to include other study fields and universities.

Useful information about **the idea and conception of the project** is available **in German only.**

A comprehensive **documentation about the project** (proposals and final reports) is available **in German only.**

The use of digital scientific information in higher education - Ohstacles and opportunities in the innovative use of media in higher education teaching

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/stefi.htm*
Original website: *www.stefi.de* (in German)

Start Date: April 2000
End Date: June 2001

Leader institution:
Sozialforschungsstelle Dortmund Landesinstitut *<http://www.sfs-dortmund.de/>*

Partner institutions:
- Gesellschaft für angewandte Unternehmensforschung und Sozialstatistik (GAUS) mbH *<http://www.gaus.de/>*
- University of Dortmund *<http://www.uni-dortmund.de/>*
- Federal Ministry of Education and Research *<http://www.bmbf.de/en/index.php>*
- Projektträger im DLR
  Neue Medien in der Bildung + Fachinformation (PT-NMB+F) (project executing organisation) *<http://www.dlr.de/>*

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The use of digital scientific information in higher education - Obstacles and opportunities in the innovative use of media in higher education teaching

The **Sozialforschungsstelle Dortmund Landesinstitut**, a federal state institute located in Dortmund and working in the field of labour research, has carried out **a representative study on the use of digitai scientific information in Germany**.
As a major result, the study shows that **most German students' information literacy is insufficient**. German students consider the supply of digital scientific information to be confusing. They feel unable to evaluate the results of their search for information.
However, the internet is the most frequently used medium in searching for scientific information. Although, the use of this medium rarely follows systematic rules. Many German students confine themselves to simply "browsing the net". German universities have not taught them how to use the new media systematically. That is why students had to acquire this knowledge as autodidacts.
The institute's results lead to comprehensive advice on how to solve these problems at least gradually. **The study concludingly suggests to**

- **upvalue information literacy in German universities' curricula**,
- enforce discourse among German students by **offering tutorials on digitai scientific information,**
- **develop criteria** in order to provide the German students with well-examined digital scientific information.

In **Aprii 2000** the **Federai Ministry of Education and Research** engaged the **Sozialforschungsstelle Dortmund Landesinstitut** in co-operation with the **University of Dortmund** and **GAUS mbH** to find out about **the status quo** concerning **the use of digitai scientific information in academic education in Germany**.
In a first step, the Sozialforschungsstelle **was to determine German students' information literacy**.
Consequently, **further potentials** were to be described.
Finally, the institute was to develop **useful measures** in order to improve academic use of digital scientific information.

Surveys with the following groups were conducted in written form at German universities and other higher education institutions:

- **Offices of the deans** (n = 353),
- **Students** (n = 2956) and
- **Lecturers** (n = 777).

Instruments used in the surveys were drawn up on a basis of 22 interviews with experts in the field of subject-oriented information, validated by pretests with lecturers and students.
The following courses of studies were surveyed: **Chemistry, Informatics, Mathematics, Physics, Electrical Engineering, Civil Engineering, Mechanical Engineering, Psychology, Education** and **Social Sciences**.
On the basis of these surveys, **several measures were suggested**. In the following, the most important results are presented.

On students' information literacy

Getting information about the students' views of their knowledge and use of digital scientific information was one of the main goals of the survey. 11,227 questionnaires were sent out to students. 26.3% were returned, 2,956 questionnaires were included in the evaluation.
In view of students' knowledge in using digital scientific information, it can be summarized that

1. for students the internet is becoming the primary source for information;
2. competences in systematic use of all kinds of digital sources (use of subject-oriented databases, information retrieval) leave a great deal to be desired; electronic search for information is too often limited to "browsing";
3. more than fifty percent of the students think that they just have a limited, mediocre or no knowledge at all of using digital sources.

Complementary results on low information literacy - lecturers' views

1. Lecturers are not satisfied with students' use of digital information sources. Especially the quality of gathered information (which is commonly obtained by employing free search engines) leaves a great deal to be desired. Lecturers emphasise students' inability to assess whether obtained information is useful and relevant, so that they are not satisfied with the quality of digital scientific information students use in their papers.
2. Additionally, two results of the lecturers survey hint at appropriate steps to be taken because of students' low information literacy. Most of the lecturers (57%) want the development of students' information literacy for using digital sources to become a subject in introductory and higher courses. One half of the lecturers (49.9%) thinks that further education in using digital scientific information should be installed for the lecturers themselves as well.

Lecturers want students' information literacy to be developed systematically. Many of them also want their own information literacy in using digital scientific information to be further educated.

Reasons for students' insufficient information literacy

The Sozialforschungsstelle drew far-reaching conclusions.
Information literacy in using digital scientific information is not obtained at universities. Three facts lead to this conclusion:

a) A majority of students (79.6%) obtained their knowledge by "trial-and-error" or with the help of fellow students (51.4%).
b) A minority (15.7%) stated to have learned to use digital scientific information systematically and with the help of universities' library staff.
c) Additionally, only every tenth student declared to have obtained information literacy in regular courses at the university.

The students can hardly be called "information literates", since they have obtained their knowledge by themselves. That is why the Sozialforschungsstelle assumes that students cannot know how to conduct a professional enquiry.
As another conclusion, the libraries' and faculties' supply in developing the students information literacy is either insufficient or not useful in students' views.

Trying an outlook: the future of information literacy at German universities and other higher education institutions

The Sozialforschungsstelle describes **two different scenarios** for possible future developments in using digital libraries.

The "worst case scenario":
Isolated students virtually "get lost" while browsing the net. They just accidentally find helpful scientific information. They cannot differentiate between relevant and irrelevant information. The development of information literacy happens – if it happens – by coincidence. If students do have information literacy, it has been developed autodidactically. Lecturers and librarians are not able to improve students' information literacy in the course of their studies. The status quo is improving rather slowly.
The "best case scenario":
Lecturers cope with students' information literacy by constantly working on it, applying methods and knowledge in their own courses. Students exchange their knowledge about relevant digital sources. Departments provide students with an assessed range of research tools which are for free. Libraries and departments commonly develop courses of training and online tools in order to foster information literacy. Basic training and further education on information literacy have become an integral and certified component of study.
Companies also approve information literacy as a major qualification of job applicants.

Conclusion: Measures to take

The Sozialforschungsstelle emphasises several steps which must be taken in order to prevent the "worst case scenario" from being realised.
All relevant authorities – the federal government, federal states, the "Fachgesellschaften", information brokers, libraries, universities, departments and professors must be held responsible – have to take the following measures to improve students' information literacy:

- Imparting of **information literacy** and of use of digital subject-based information has to become an **integral component of studies** at university and other higher education institutions.
- Knowledge exchange among students concerning the use of digital subject-based information has to be encouraged and institutionalised in **tutorials**.
- Students and lecturers have to be provided with **assessed digital scientific information by departments and faculties**. This can be realised on the departments' homepages.
- **Demands** on students' information literacy have to be **developed by both universities and companies.**
- **Courses and learning modules for professional use of digitai scientific information must be conceived, developed, applied and assessed. Therefore, intra- and inter-university cooperation of lecturers, libraries and information brokers is absolutely necessary.**

An important report in English with many helpful charts is the **Lecture at the 23rd DGI-Online-Conference 2001, Frankfurt/M.:**
Rüdiger Klatt - Konstantin Gavriilidis - Kirsten Kleinsimlinghaus - Maresa Feldmann *et al., Barriers in using digital scientific information at German universities and other higher education institutions – How to develop potentials in academic education* <*http://www.stefi.de/download/english.PDF*>.

CHILIAS - CHildren's library - Information - Animation - Skills
The European Virtual Children's Library of the Future

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/germany/CHILIAS.htm*
Original website: *http://www.stuttgart.de/chilias/1998/chiliasinfo/info_eng.htm*

Start Date: April 1996
End Date: October 1998

Main institution:
Stuttgart City Library - coordinating contractor
<http://www.s.shuttle.de/buecherei>

Stuttgart

Address:
Stuttgart City Library
Konrad-Adenauer Str. 2
70173 Stuttgart
Tel.: +49 711 216 5710 / 5730
Fax: +49 711 216 5701

Contact person:
Ingrid Bussmann (Project Coordinator)

CHILIAS Project Partners:
- Hellenic American Educational Foundation - ATHENS College Library, Greece
- Diputacio de Barcelona - Servei de Bibliotheques, Spain
- Borough Council of Gateshead -Libraries and Arts Service, Great Britain
- Vantaa City Library, Finland
- nstituto superior de Estatistica e Gestão de Informação (ISEGI) Universidade Nova de Lisboa, Portugal
- University of Helsinki - Vantaa Institute for Continuing Education - Information Technology Centre for Schools, Finland

Further partners:
- Costeas Gitonas School Ltd, Greece
- University of Sunderland Information Services, Great Britain
- Association of Finnish Local Authorities -Education, Cultural Services and Leisure Activities Unit, Finland
- Akateeminen Tietopalvelu ATP Oy, Finland
- University Turku - Department of Education -Centre for Learning Research, Finland
- Ravensburger Interactive Media GmbH, Germany

CHILIAS - CHildren's library - Information - Animation - Skills The European Virtual Children's Library of the Future

CHILIAS - the European Virtual Children's Library of the Future - is a project of the European Commission within the framework of the Telematics Applications Programme 1994-1998 - Telematics for Libraries. Under **the co-ordination of Stuttgart City Library,** CHILIAS has created a multimedia virtual simulation of a children's library on the WWW/Internet.

CHILIAS has been developed **between 1996 and 1998 in collaboration with partners from Finland, Great Britain, Greece, Portugal and Spain.**
The Internet and multimedia give children new means for acquiring information and learning. These demand a corresponding range of new information-seeking and information-handling skills.
CHILIAS provides the Infoplanet Web site which contains pages for children aged 9-12 on authors, books, media and the library.
It is a **user-driven project.** Children have played an integral part in the creation of the application. CHILIAS has explored a new role of children's libraries and school libraries to cope with the challenge of the future information society.

The virtual children's library is developed

- in six language versions
- with common user interfaces
- with common topics in all versions
- with local topics
- with local materials (from the library stock or produced by children)
- with links between all language versions (e.g. German children can browse through the English or Spanish virtual library and get similar information in different languages).

CHILIAS also provides a skills package (on the WEB or on a CD-ROM) to improve children's competence in information searching and in using traditional and new information resources.
The interactive cyclic validation of the objectives of the project in all steps of realisation also presents the results of children's attitudes towards traditional and new media use in the library.

Timetable of the project

- User Needs Analysis - Results were published by end of 1996
- First Prototype on the WEB by Summer 1997
- Testing of prototype with selected user-test groups (Autumn 1997)
- Development of prototype ongoing until end of project
- Testing of prototype in real test-sites (end of 1997)
- Final Report: Summer 1998.

Children in Libraries: improving multimedia virtual library access and information skills

CHILIAS has developed a new concept that makes **European children's libraries** and **school libraries** a stimulating environment for **innovative multimedia supported learning** and **creative use of Internet technology.**

The Infoplanet

The project **developed four complementary and integrated applications**, in a **WWW environment**, named ***InfoPlanet***.

1. ***A virtual library*** - the ***Infoplanet Website*** which contains **Web pages for children aged 9-12 years** on authors, books, media, topics like animals, sports, music and the library in German, Finnish, English, Greek, Spanish and Portuguese. Infoplanet has enhanced the attractiveness of the real library, supporting the bridge between traditional and new media.
   - The Space Metaphor - The CHILIAS consortium decided to use the **space metaphor** to symbolise the idea of a **virtual library** (information - knowledge - wisdom). The Infoplanet has been created in six language versions. Although the idea and the general framework is common in all Infoplanets, content and materials are local because of the cultural diversity. All Infoplanets are linked together by flag symbols and a European map.
   - The topics - The Infoplanets provide common topics based on the results of the User Needs Analyses done at the beginning of the project. All sites have chosen local topics as well according to the needs of their users.
     The core of the Infoplanet is the **Author Gallery**. All sites provide information about children's book authors, about their life, their books and where to find the books in the library.
   - Navigation Tools
2. **An interactive application for creative input from children**, the ***Storybuilder***. Children create stories in their local language using the symbols the Storybuilder provides.
   The language problem is a challenge for the project idea to stimulate European communication. Children of the target age group learn English, but they have difficulties in writing in English. So the project has arranged storybuilding events in all sites in the local language. A selection of stories has been translated to English to share the ideas all over Europe.
3. **A discussion and feed-back tool for use by children**, the ***Guestbook.*** Children can write comments to selected topics and answer messages from other children.
   Although the language skills of the target age group set limits to European communication, there are many children in all sites with a multicultural background. So the Guestbook has contributed to multicultural European communication.
4. **An information skills tool** - ***Infoton***. Infoton provides **interactive exercises in basic information-seeking skills** like alphabetical order, classification and categorisation. The CHILIAS User Needs Analysis has clearly shown that children of this particular age have difficulties in both constructing a search and in deciding upon the relevant medium to search. Therefore CHILIAS has created a learning environment aimed at the fostering of expertise in information seeking skills and in subject knowledge. Within the term of the project Infoton could only be developed representative in scale with exercises on basic skills.

CHILIAS: a user-driven project

CHILIAS has involved the end-user group children in the project development from the first steps. Children have participated in designing the virtual library and in generating content for the virtual library. Lots of the Infoplanet Web pages have been written by children. The children's library in Stuttgart has created the "**Internet-Reporter**", library workshops for children to create Web pages. Guided by the librarians, children have designed their own Web-pages on selected topics. And by doing this they have learned how the Internet works and enhanced their computer literacy and their information-handling skills.

In all sites school classes have been involved in the designing process. Teachers and students have been motivated by the libraries to contribute to the Infoplanet.
Stories have been written by children. Children have contributed drawings to the topics, they have created new presentation of books for the Infoplanet, they have presented their town or their country with photos they have taken and information they have written.
The library has provided the facility for digitising the materials and teaching children how to do it. This process of involving children in developing Web pages for the Infoplanet is a crucial impact on a new role of children's libraries and school libraries and on creating the library as a new learning environment.

Key issues

The main technical issues to be explored in CHILIAS were:

- **Design of a virtual children's library and concepts for its representation.**
- Development of interfaces and user-access to multimedia and networked technology for use by children.
- Creation and conversion of materials to digital form.
- Presentation of digital materials.
- **A prototyping skills package supporting information seeking and library navigation tasks.**

Impact and expected results

On completion of the project, *InfoPlanet* operational implementations existed at six principal test sites, serving variously children's libraries within public library services and school libraries. Four of the test sites have links to large regional library and school user-bases.
Project results included:

- Creation of virtual children's libraries of multimedia materials, established in different countries.
- Integration of communications and media creation applications in the demonstrator.
- A prototype and demonstrator of tools for different information skills.
- Evaluations of usage of the tools and applications by children, teachers and librarians.

InfoPlanet was fully endorsed by all project reviewers, who recommended that it should be widely promoted and supported throughout the EU.

Rich and relevant information about CHILIAS are also available at:
http://www.cordis.lu/libraries/en/projects/chilias.html;
http://www.ifla.org/IV/ifla64/043-113e.htm.

CHILIAS was followed by **a new European project, VERITY - Virtual and Electronic Resources for Information skills Training for Young people**. Under coordination of University of Sunderland, Great Britain, VERITY started in April 1998. VERITY has developed **a new electronic library service** aiming at the needs of **young people between 13 and 19 years** with a Virtual Librarian, a Referral Service and an information skills package for the target age group.

About both the projects see: **Bussman, I. – Stafford, J. (2000), *New service to develop children's and young people's information skills – the European projects CHILIAS and VERITY.* "New Review of Children's Literature and Librarianship", No. 6 (2000), p. 137-146.**

EnIL – the European network on Information Literacy

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/enIL.htm*
Original website: *http://www.ceris.to.cnr.it/Basili/EnIL/index.html*

Start Date: 2001-

Institution:
National Research Council <http://www.cnr.it/sitocnr/Englishversion/Englishversion.html>

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Marco Tollis (Website design and development)

EnIL: a network for a Culture of Information in Europe

EnIL - The European network on Information Literacy is a result of the intention to open a **European discourse on Information Literacy**, as we observed **a lack of awareness within the European scientific community and a fragmentation of the IL initiatives** started **in Europe**.
EnIL's purpose is **to define and develop an *assessment and certification system* of IL competencies** initially targeted at the population of university students.
The philosophy underlying EnIL actions is to agree **a common research agenda at European level**, which should lead to **sharable and comparable results.**
The network is open to any contribution from the European IL community.

Aims

1. Establishment of an aggregation and discussion place among European IL experts (the **EnIL network**);
2. Production of **a report on the state of the art of IL in Europe**;
3. Agreement within the network on **a common research agenda** as well as on the conditions under which results previously obtained by each country can be shared;
4. Development of **a system for the assessment and certification of information skills of the Higher Education students in Europe**;
5. Experimentation of a ***European Information Driving License*** **(EiDL)**, analogous to the European Computer Driving License (EcDL);
6. Start of a number of **EiDL pilot projects in different countries.**

The philosophy underlying the entire EnIL programme is based on
common strategies,
exchange of results,
production of comparable data.
Common, sharable and comparable results, in fact, give a Europe-wide methodological value to all the EnIL actions. Furthermore, operating as a network, EnIL empowers the promotion of its goals.

The research agenda

The European network on Information Literacy is a research project started in 2001 by the Italian National Research Council, with the aim of adopting a common research agenda and sharing results among IL researchers in Europe.
To date the network includes IL experts from research and academic institutions in: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Slovenia, Spain, Sweden, and the United Kingdom. The network will be further enlarged to include all EU27 countries.
The **main research issues** addressed by the EnIL network are:

- *Policy awareness*: to what extent is IL a national policy issue in the different European countries?
- *Higher Education Policies*: What are the academic policies related to the integration of IL into university curricula?
- *Best practices*: what is the best implementation model of IL in Higher Education?
- *Barriers*: what are the main barriers to an effective integration of IL into academic curricula?

- *Literacy status*: what is the level of IL competency among university students in Europe?

Each research question corresponds in our vision to a (sort of) indicator aimed at depicting what we call the *IL-readiness* of a country.

Results

The network of experts

The first nucleus of the network is composed of experts from research and academic institutions from: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, The Netherlands, Portugal, Slovenia, Spain, Sweden, and United Kingdom.

The network has to be further enlarged to other European countries.

The range of competencies spans from researchers in Information & Documentation field and librarians. The network still shows a lack of researchers in the fields of Education, life-long learning and e-learning.

Books

- ***Information Literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union***, ed. by Carla Basili. Roma: Consiglio Nazionale delle Ricerche, 2003, 315 p.
- ***Information Literacy at the crossroad of Education and Information Policies in Europe***, ed. by Carla Basili. Roma: Consiglio Nazionale delle Ricerche, 2008, 301 p.

European Observatory on IL Policies and Research

The **European Observatory on IL Policies and Research** is an online gateway to **European policies, research projects** and **initiatives related to information literacy**, with special focus on **Higher Education developments**.

Aim of the Observatory is to produce a **picture of the degree of IL-readiness** of European countries.

As to **2009**, the Observatory has been established for **Austria, Denmark, Estonia, Finland, Germany, Italy, Latvia, Lithuania, Poland and Spain**; it consists of more than 600 web pages and is arranged in the following sections:

Policy initiatives
Survey-reports
Research projects
Campus initiatives
Events
Special interest groups
Academic library initiatives
Tutorials
Learning resource centres
Public library initiatives

A section contains a set of entries, each describing an initiative related to IL in the country.

The general format of the initiatives listed in the EnIL Observatory includes the following fields:

Title and network address:
Body responsible:
Start date:
End date (if applicable):
Typology:
Textual description:
Keywords:

Survey

In January 2004 a meeting of EnIL members on "*Information Literacy in Europe: a common research agenda*" was held in Rome.

Among the results of the Meeting, it was agreed to start a survey on information competencies of the university students in Europe. To date, the countries participating in the initiative are: Austria, Denmark, Finland, Greece, Italy and Sweden.

The questionnaire is available in twelve languages on the EnIL website.

As a result of this activity, **a collection of international data**, in any case **comparable**, will be object of analysis for future actions.

Future activities

EnIL nesletter

Newsletter is an initiative strictly connected with the Observatory, as at the moment it is devoted to providing more details about IL initiatives in Europe.

The Sewcom Method: Search the Web with the cognitive power of the concept maps

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/sewcom.htm*
Original website: *http://cidoc.iuav.it/%7Econrad/sewcom/eng_version/*

Start Date: 1999-

Institution:
IUAV University of Venice - CIRCE (Centre for Interdepartmental surveying, map making and processing services) <*http://circe.iuav.it/*>

Venezia

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Contact person:
Corrado Petrucco

The Sewcom Method: Search the Web with the cognitive power of the concept maps

It is a new methodology that uses the cognitive power of the concept maps to enhance the search skills.
The SEWCOM method is a metacognitive method to search, choose and integrate knowledge on the web. It utilizes the concept maps to help focalize visually the object of interest and to integrate it in pre-existent cognitive structure.

Theoretical bases

- Students as infotective and the need for information literacy
- Cognitive strategies and cognitive styles to search the Net
- Concept maps as metacognitive tool to search, build and re-elaborate the knowledge found on the net
- The importance of a lexicon explicited by concept maps
- The two processes: selecting a lexicon and selecting a strategy.

Information search involves two hardly connected processes:
a. learning the lexicon of the issued semantic domain and
b. learning the best strategies to locate the information.

The SEWCOM method tries to integrate both processes. It uses the metacognitive/visual approach of the concept maps and can be used either collaboratively and stand-alone and comes out from previous observation and experimentation with adults and young people from the latter classes of the higher schools.

The four steps of the SEWCOM method

1. Brainstorming and contextual planning of the concept map through words connected with the argument that you will search on
2. Topological re-organizing of the map in relation to the individuated semantic areas and use of the search engines through the key-words of each area
3. Reading and interpretation of documents found and discovering of new words to include into the map
4. Creative re-organization of the map and of the new knowledge acquired.

The Galileo case: an example of SEWCOM method

Testing

The SEWCOM method was experimented during a series of seminars on Didactics on the Net. They took place **in 1999 and in 2000** for about 200 persons (**headmasters** from Veneto, Friuli and Sardinia, and **students from secondary schools** of Veneto). It was tried to verify on adults and young people if and how much a metacognitive reflection supported by a concept map could improve the efficacy and effectiveness of on-line searching.
At present, the SEWCOM method has been tested in many schools overall in Italy.
Some **testers** are listed at: *http://cidoc.iuav.it/~conrad/sewcom/eng_version/join_us.htm.*

Courses

Level: basic and advanced
Target groups:

- headmasters; students attending secondary schools
- managers and officials of public and private companies

- **Schools**
  The short course is a 2-day course – 8 hours overall (4+4)

- **Managers and officials of public and private companies**
  1-day courses
  - *How to extract the real knowledge from the Internet using the search engines* (basic)
  - *The SEWCOM method: brainstorming through the concept maps and the web search engines. Visualizing, constructing and sharing Knowledge* (advanced)
  - *Information searching on the Internet and the evolution towards the Semantic Web. The future of Knowledge Management* (basic)

  Seminar study: 2 days for each course edition (Venice, 5-6 December 2002 and 23-24 January 2003)
  - *Information searching on the Internet and the evolution towards the Semantic Web: chances for the Public Administration.*

Useful reports are available **in Italian** at:
http://ulearn.itd.ge.cnr.it/workshop_syllabus/abstract%20presentazioni/petrucco.doc
http://www.edscuola.it/archivio/software/sewcom.html.

Related sites:
http://eurekster.com/nations/Concept_maps_-_sewcom_method.htm
Concept maps – sewcom method Search Engine:
Info Nation founded by Corrado Petrucco on 23 April 2004.

A rich bibliography (in English and Italian) **is available at:**
http://cidoc.iuav.it/~conrad/sewcom/eng_version/applicazione_bib.htm.

Blended learning information literacy project for high school teachers - 2nd edition

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/liuc_project.htm*
Original website: *http://www.biblio.liuc.it/pagineita.asp?codice=113* (in Italian)

Start date: October 2005
End date: May 2006

Institution:
Università Carlo Cattaneo (LIUC). "Mario Rostoni" Library
<http://www.biblio.liuc.it/pagineita.asp?codice=87>

Castellanza (Varese)

Address:
Biblioteca "Mario Rostoni"
Corso Matteotti, 22
21053 Castellanza (VA)
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Fax: 0331-572.238

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Blended learning information literacy project for high school teachers

How to search for disciplinary information on the Internet
Information literacy: e-learning paths for high school students (2nd edition)

Main goals

The project aims at developing e-learning tools (e-books) in order to integrate high quality information on the Internet (including databases, Opacs and publishers' online catalogues) into disciplinary didactics.
Disciplinary e-books are used in the classrooms through the blended learning mode – in presence lessons, which include use of electronic didactic supports, and distance sessions.
Students are guided to focus their need for information and to develop coherent search strategies in order to improve their information literacy level.
Information literacy covers electronic resources and traditional print materials.
Teachers are assisted in selecting, describing and managing the most relevant web sources with regard to the subject area, so that the online documentation can be used to deepen, integrate and contextualise their own lessons.
The use of e-learning tools and hypertexts is a useful element in the didactics in presence, because it is an effective solution for organising web contents and making them accessible in an easy and dynamic way.
Consulting via web the produced e-book, students:

- navigate the web together with teachers in the classroom,
- interact with the class in presence and at distance through the forum and
- deepen contents at distance from home.

The e-book simplifies teachers' update of didactic materials, which activity is necessary because of the volatility of information on the web.

Participants

- **Carlo Cattaneo University LIUC - "Mario Rostoni" Library**
- **Carlo Cattaneo University (LIUC) - CARED (The University Centre for Education Research and Training)**
- **Regional School Department of Lombardia-Italy - Head Office**
- **High schools**

Target group: high school teachers
Level: basic and advanced

Methodological approach: case based instruction, learning process activation, action–oriented learning/teaching, problem solving.

Competencies acquired

The following competencies are developed and certified:

- Using an e-learning software in didactics;
- Creating hypertexts, self evaluation exercises in xml, web tutorials;
- Analysing the main characteristics of information on the Internet; evaluating the quality of disciplinary information on the net;

- Analysing disciplinary sites; description and indexing techniques;
- Deepening semantic search techniques (OPACs and bibliographic databases).

Main phases

1. **Teachers training - stage (15 hours) at LIUC – October-November 2005**
   Teachers learn **how to use the e-learning software and e-learning tools in didactics.**
   The **"Mario Rostoni" Library's experience** (more than 400 LIUC students have participated in the courses and 4 e-books relative to bibliographic, economic, legal and statistical information searching were realized) are available.
   Its model, oriented to **disciplinary information searching** and **problem solving**, is used in order to create **new e-books for high schools students with regard to the subject area.**
   The selected sites are described and linked within the hypertext of the e-book.
   This phase includes:
   - The creation of **didactic paths**, partly exemplifying, in which to organise contents;
   - **Self-evaluation exercises;**
   - **Web tutorial** on using the main resources;
   - **Glossaries;**
   - The development of **case studies.**

   It consists of **two modules:**
   1. **theoretical approach** (9 hours)
   2. **practical application** (6 hours).
2. **Development of e-learning tools (at least 20 hours, at distance) – December 2005-January 2006**
   Using the software, teachers develop their disciplinary e-books, at distance, through an easy to use web interface, with the tutoring of the Library's staff.
3. **Students training: in-class courses – April-May 2006**
   The e-books are used in the high schools: in laboratories equipped with computers and Internet access, teachers teach the classes how to search for disciplinary information and deepen the teaching contents using the online documentation.
   They are supported in monitoring and evaluating this experience.

Libraries at schools - Schooling at the library

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/Libraries_at_schools.htm*
Original website: *http://www.biblioscuole.it*

Start Date: April 2004
End Date: 2007

Institution:
Ministry of Public Education <*http://www.pubblica.istruzione.it/*>.
General Directorate for Information Systems (MPI-DGSI)
<*http://www.pubblica.istruzione.it/innovazione/index.shtml*>

Rome

Address:
Ministry of Public Education
General Directorate for Information Systems (MPI-DGSI)
Viale Trastevere, 76/A
00153 Roma

Contact person:
Luisa Marquadt

Libraries at schools - Schooling at the library

The MPI national pilot project **"Libraries at Schools - Schooling at the Library"** ("Biblioteche nelle Scuole") aims at:

- connecting schools with the local context and the library world;
- providing innovative services;
- granting access to information, also by the means of co-operation and the services of the Italian National Library Service (SBN);
- **enhancing information literacy**, promoting reading, and contributing to lifelong learning.

It's funded and supported by the Ministry of Public Education - General Directorate for Information Systems (MPI-DGSI), and the Department for Innovation and Technologies (DIT), in collaboration with the National Centre for the Union Catalogue (ICCU).

The "BiblioScuole" Project is:

- exploiting the school information and documental resources;
- promoting the school librarians' professional development, thus contributing more effectively to school education;
- helping the transition of the school library into a learning and cultural environment, as stated by IASL, IFLA, UN and UNESCO.

Training courses are scheduled for documentalist teachers, library staff, teachers and students.

The aim of the training program is to furnish the school library with professional management and to encourage a skilled and keen use of information, whether structured or not (Research and quality of information in Internet).

Participants:

- more than 2,500 school librarians and teachers involved in the education and training program;
- 800 schools (from pre- to high-school), organized in 120 local school networks.

Partners:

the three Italian interuniversity supercomputing consortia - **CASPUR**, **CILEA** and **CINECA** - are involved (due to their technological and library expertise) in order to fulfil the project requirements.

Educational material, developed for the project, is available **in Italian only**. Among the didactic units there are:

The School Library: directions for use, an introductory guide divided into different modules.

The School Library

- The concept of service in the School Library.
- **Research methodology at schools**: the concept of research and its method; how to valorize research among the educational strategies.

The Digital Library

- The Digital Revolution: an overview.
- Access to information services.
- An introduction to the Digital Library

The National Library Service (SBN)

For a short description of the project in English, see:
http://www.biblioscuole.it/public/meta_file/presentazionebns_en1.pdf.

Useful information are available in Italian at:
http://www.istruzione.it/innovazione/progetti/biblioteche-nelle-scuole.shtml.

Further information

The **"BiblioScuole" Project's objectives** are:

- Connecting schools to the National Library Service (SBN), for its services: interlibrary loan, document delivery, shared cataloguing.
- Educating and training the school librarians in a blended learning context, by the means of a dedicated software, accessible through the project portal.
- Implementing several services (such as educational thematical pathfinders), and the access to relevant historical and cultural interest (digital) documentation held by the school libraries.
- Setting up and implementing the portal "www.biblioscuole.it", in order to provide information about the project and access to its on-line services: e-learning platform, forum, FAQs, community, VRD, repository, opac, school libraries registry, etc.

The School Library: service, tool, observatory for promoting school culture – Multimedia educational resources centre (CREMS) Project

English outlines in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/crems.htm*
http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/crems1.htm
Original websites: *http://www.bdp.it/servizi/crems* (under restructuring)
http://www.bdp.it/iride/ricerca/documenti/profilo.doc (in Italian)

Start Date: 1996-

Institution:
BDP - Pedagogical Documentation Library (from 1999 changed into INDIRE - The National Institute of Documentation for Innovation and Educational Research) <http://www.bdp.it/index.php>

Florence

Address:
Indire
via M. Buonarroti 10
50122 Firenze
Tel.: 055.2380301
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The School Library: service, tool, observatory for promoting school culture - Multimedia educational resources centre (CREMS) Project

The Italian Ministry of Education – Study and Planning Office asked the **Pedagogical Documentation Library of Florence (BDP)** to do the following **research:**
"The School Library: service, tool, observatory for promoting school culture – Multimedia educational resources centre (CREMS) Project".
Its main task is "*to found the theoretical bases and to provide informative data*" in order to:
- **enhance school libraries in the development of autonomous learning and mastery and criticai use of information resources;**
- **realize prototypes for education of librarians and documentalists.**

The aims of the research project are:
- **a survey about school libraries, in order to know what works in them;**
- **a feasibility study for their regulatory reorganization.**

Working Methodology

Three facets:
1. **Theoretical:** the literature on this topic (especially key IFLA documents and French, Canadian and English materials) is analysed and discussed.
2. **Documentary information:** through the European network EURYDICE information is collected about European school libraries and school documentation centres, their statutes, staff and functioning ways; this information arrived with official documentation, statistical data, additional documentation;
3. **Search on the field**: it has been carried out in **Italy, France, England, Denmark, Germany** in order to analyse the state of the art, trends and pilot projects in this sector; the Italian situation is compared with the others and every country shows specific features.

The survey

In Italy the **survey tools** are:
- **a questionnaire for qualitative analysis;**
- **case studies for qualitative analysis.**

The detailed questionnaire was sent to a sample of school libraries; this sample – representative of all schools, with their different levels and typologies, in the different country areas – was provided by the Italian Ministry of Education – Study and Planning Office. The Pedagogical Documentation Library of Florence (BDP) attended to distribute questionnaires and collect data.
The response rate was of 53%.
A special attention has been paid to **the secondary schools.**
The results - examined in the final report - show a **widespread deficit in every respect** (operators' competencies; how school librarians are integrated into the didactic educational planning etc.).

Case selection (Italy and foreign countries)

The research group has defined the **case selection criteria.**
Key items:
- **Descriptive-interpretative case study approach;**
- **Reputational case selection.**

Library project systematically integrated into curricula is a preferential element.
In Italy, in addition to the reputational case selection sampling method, **the representativity** criterion – for models, geographic areas, school levels and degrees – has been used.
In the foreign countries, the criterion has been to prefer countries whose **library models are original and very characterised** – for equipment, relations with the territory and the public library, documentary approach vs. bibliotheconomic one, integration into the curriculum, new technologies' use: so that England, France, Denmark and Germany have been selected.
Inside these countries, the case selection sampling method has been applied through the Eurydice network and using the universities' and libraries' networks.
A common observation grid has been set up in order to obtain a homogeneous data analysis.

CREMS professional profiles

They were developed and defined by the **Research group on "The school library: service, tool and observatory for promoting school culture":**

- TEACHER DOCUMENTALIST

Teacher professional who practices and teaches **the expert use of information within educational processes**: learning, teaching, personality development, school and vocational orientation.
Its transversai function is performed **on two main sides**:
- as **school documentalist, focussing on school as the core of an information network** functional to meet contextual educational needs and **building ali the documentary tools** in order to turn the information into a resource;
- as **teacher, teaching** - together with the disciplinary teachers - **an expert and critical approach to information sources**, its methods and strategies, during the production phase and the use phase.

Requirements: specific competencies – acquired through **a Bachelor's degree and a Master's degree** - in educational sciences, information and documentation management, organization and handling, sciences and technologies.

- CREMS TECHNICAL ASSISTANT

Technical/administrative professional who **assists the teacher documentalist** in the technical aspects of the document path within a CREMS (Multimedia Educational Resource Centre for Schools) and in teaching activities, **and collaborates with him** in the organizational, archival, administrative-accounting work in order to manage the CREMS.
Requirements: specific competencies – acquired after **a high school diploma** through **an annual specialization course** – in organization and management techniques, information and documentation sciences and technologies.

The model

What is CREMS (Multimedia Educational Resource Centre for Schools)?
The model put at the centre of the debate and of school community proposals has the following characteristics:
CREMS is **a resource centre in a learning environment** - under the direct responsibility of a **teacher/documentalist** holding a permanent post and assigned to it full-time - where:

- multimedia documentation resources (books, software) are integrated into the learning process and into problem solving;
- multimedia documentation resources (books, software) are integrated into the in-service training of teachers;
- **abilities and strategies for the competent use of information are developed**;
- different teaching styles are experimented;
- the pleasure of independent research and reading is fostered;
- a habit of documenting and sharing products of experimentation and teaching innovation is developed in teachers;
- positive forms of socialisation, in a spirit of openness towards the external world, co-operation, and a respect for rules can be experienced;
- cross-curricular activities are carried out, fostering didactic continuity, guidance, and continuing and permanent education.

The CREMS by definition is not self sufficient, but sets out to be **the nucleus of a wider information system** within the community and the major information networks.

Searching for and processing information - A high school project

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/fermi_project.htm*
Original website: *http://www.itgfermi.pt.it/cadonici/homecad.htm* (in Italian)

Start date: SY 2001/2002-

Institution:
"E. Fermi" Technical High School for Surveyors
<http://www.itgfermi.pt.it/>

Pistoia

Address:
Istituto tecnico per geometri "E. Fermi"
Viale Adua, 98
51100 Pistoia (Italia)
Tel.: 39-573-31.339
Fax: 39-573-24.615

Contact persons:
Prof. **Roberto Cadonici**
Tel.: 39-573-452638

Team of educators
Marina Bolletti (Teacher documentalist at the Library of the "A. Cornaro" High School, Padova)
Antonella Braga (Researcher, teacher of Philosophy at the High School of Novara)
Donatella Lombello (Lecturer of Bibliography and Librarianship at Padua University)
Vera Marzi (Researcher at the Department of Historical-Philosophical and Pedagogical Research, University of Rome "La Sapienza")

Teachers
Roberto Cadonici (coordinator)
Rosanna Brillante
Caterina Cannavaro
Maria Cristina De Vita
Lucia Francalacci
Giuliano Giovannelli
Alda Niccolai

Searching for and processing information - A high school project

The project, funded by the European Social Fund and developed for the school years 2201/2002 and 2002/2003, is still going on.

The course mostly takes place during the school timetable and is articulated according to the following progression plan:
Organization > Education > Presentation of sources and tools > Theorization of sources and tools > Research models > Guided exercises > Research laboratories > Testing phase > Production of papers > Exposition of the papers > Testing and monitoring
The Multimedia School Library is the driving centre for all project actions.
The Information Society is one of the strength points of the project, together with its transferability, flexibility and adaptability to the curriculum.
The acquired competencies should be jointly certificated by the course teachers on the basis of the results provided by the monitoring team (Padua University).
Active and positive participation in the course contributes to the school credit.
The monitoring is entrusted to the Department of Education Sciences, Padua University (Prof. Donatella Lombello and her équipe) and is scheduled during the course and at the end of the first year.
The focus of this interdisciplinary project is on education for research by using the Multimedia School Library: the main purpose is to empower individuals and groups providing them with learning strategies.
Learners have been guided towards acquiring a method, so that they acquire competencies in using research tools, and then directly use paper and electronic resources.
After the first year, the experience was proposed, in a simplified version, to all new first classes.

Summary of the expected results
- to effectively fight school dispersion;
- to effectively develop and promote a continuing education process;
- to strengthen the rewarding elements in the school curriculum;
- to provide basic information skills.

The context
The underlying premise is the need to progressively pass from didactics based on contents to didactics aiming at developing the personal independence, with special regard to information searching. The method aims at teaching how to search for, process, present and communicate information, transversally across curricular disciplines. It turned out useful against the school dispersion, phenomenon particularly relevant in the last classes included by the school's obligation.

Goals
The main aim is to activate a process of continuing education (lifelong learning).
The main transversal priority is to promote the information society.

General objectives:
1. Competent use of information (information skills)
2. Introduction to using the library as a tool useful for recreation, information, all the processes of continuing education.
3. Increase of self-esteem and enhancement of personal autonomy

Specific objectives:
- conscious knowledge of the research sources
- conscious knowledge of the search tools
- equal social opportunities in the access to the resources
- learning through the resources
- introduction to the functional reading
- introduction to the pleasant reading
- building of a research path
- building of a research method
- elaboration of a transversal research
- exhibition of the results.

Measure: to avoid and fight school and educational dispersion (comprising various phenomena such as students' delays in the course of studies, school year repetition and dropping out).
Intervention: to develop basic and transversal competencies.
Development and improvement of
- cognitive, communicative and relational abilities;
- project and organisation abilities;
- language, research, logical-mathematical skills;
- new alphabets;
- entrepreneurial culture.

Target group
Students in the last year of compulsory school attendance (i.e. **the first year of secondary education),** attending "E. Fermi" Technical High School for Surveyors.
The project has accompanied **the students in the following school year too.**

Classwork
The path is structured in **3 modules**, which are logically successive, but practically often simultaneous or overlapping:
1. Propedeutic lessons/exercises;
2. Performing a common guided research within a class;
3. Lessons and exercises in order to develop skills of handling, managing and communicating information.

Evaluation and effects of the classwork experience
Three different levels have been considered and analysed:
- evaluation of the program carried out;
- evaluation of the contents;
- evaluation of the user satisfaction

The stages of a research path

The proposed set of units tries to rationalize the activity to searching for and processing information, in order to provide students with **an univocal method**, beyond the different disciplines and topics:

1. To focus the research subject; to identify the key words;
2. To know how to locate relevant information and reformulate the content;
3. To know the organisational criteria of the information material, to know how to consult the various texts;
4. To know how to find documents and skills to gain access to sources;
5. To know how to evaluate information and information sources;
6. To know how to make and present the report of their work.

Useful pages (in Italian)

- **The preliminary project**
- **Work Modules: Marina Bolletti - Vera Marzi,** ***Information searching and use skills: a case study.***
- **Synthesis of actions: Searching for and processing information. An educational model in step with time.**
- **Liking in 2002: user satisfaction questionnaires.**
- **Some results: research examples.**
- ***The wheat and the sack.*** **A multidisciplinary and multimedia path within the library.** (Tuscia University, Master on management of multimedia school libraries)
- **Roberto Cadonici,** ***Searching for and processing information. The project of "E. Fermi" Technical High School, Pistoia.*** Communication presented at the international conference: ***Coming up against the problem: The information seeking process in the multimedia school library.*** **Padua, 30 January - 1st February 2003.**

The Library Project

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/italy/curiel_project.htm*
Original website: *http://www.liceocuriel.it/pof.php?page=10* (in Italian)

Institution:
"E. Curiel" Scientific High School <*http://www.liceocuriel.it/*>

Padova

Address:
Liceo Scientifico "E. Curiel"
Via Durer 14
35132 Padova
Tel.: 049-612444
Fax: 049-612851

"E. Curiel" Scientific High School - Padua

The Library Project

Library instruction enhanced with hints of information literacy

Target group: high school students of all the classes
Level: basic and advanced

Didactical objectives

- **To develop students' independent skills and competencies in critical and shrewd documentary research using different sources**
- **To promote and increase the use of the multimedia library for a didactical purpose**
- Training course for an interclass group of more expert students who will serve as library tutors
- Structured course activities: in presence and through e-learning.

Didactical contents

- **Library's mission**, functions, services and structures
- Its importance, meaning, fundamentals, levels and different sources
- **Resources and tools for current documentary research**
- **The "6 big skills" identified and codified by educational research at international level.**

Tools and methods

- Propedeutic didactical units prepared by the Library Coordinator and agreed upon together with class teachers
- Methodological interventions: Library Coordinator, class teachers together with students within the Library
- **Guided library tours**
- **Guided research**: practical exercises of students within the Library
- **Autonomous research**: practical exercises of students outside the School
- Customised exercises, tailored to students according to their level and needs
- Collaboration with the transversal group of students expert in using the Library.

DELCIS - Distance Education for Librarians: Creating an Information-Competent Society - Latvian section

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/DELCIS.htm*
Original website: *http://www.liis.lv/delcis/* (in Latvian)

Start Date: 1 January 2001
End Date: 31 December 2002

Institutions:
- University of Latvia. Continuing Education Centre for Librarians of Latvia (CECLL) *<http://www.lu.lv/szf/BDTC/BDTIC_anglu.htm>*
- Riga Central Library *<http://www.rcb.lv/>*

Riga

Addresses:
Continuing Education Centre for Librarians of Latvia (CECLL)
Terbatas Street 75
Riga, Latvia LV–1001
Tel.: 371 7312808
Riga Central Library
Brīvības iela 49/53 , 6, 7. stāvā
Rīga, LV - 1010
Tel.: 7037121
Fax: 7037131

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Distance Education for Librarians: Creating an Information-Competent Society (DELCIS) - Latvia

In 2001/02, the Continuing Education Centre for Librarians of Latvia (CECLL) took part in the project "Distance Education for Librarians: Creating Information-Competent Society" (DELCIS), which was financed by the Leonardo Da Vinci programme of the European Union. Partners in the project were institutions from a wide geographic area, including Scandinavia (Denmark), Eastern Europe (Lithuania, Latvia, Estonia), Central Europe (Romania) and the Mediterranean region (Greece).

As a result of the project, an **e-education programme of ICT skills** was developed **for librarians and information workers in Lithuania and Latvia**. The focus was on:

- the functions of **today's library as an intermediary**, which are accomplished with the help of ICT, as well as the requirement that librarians must have the skills that allow them to compete in the labour market;
- the opportunity to offer an **alternative teaching/learning environment,** which facilitates **independent study** in terms of time, speed and amount;
- **the need for alternative training** in terms of content and quantity, independent of the location of participants, as well as the limited teaching staff and the amount of finance available for continuing education.

The distance education version of the training courses has been managed by the University of Latvia.

The ICT courses were originally created by Aarhus County Library (Denmark) in 1998 and over the two-year period of the project were adapted and supplemented to match the requirements of library and information workers in Latvia.

From 2003 library professionals in Latvia can use the programme, which comprises **three courses**, or they can take each course separately. The courses are also integrated into the licensed professional development programmes.

The **three independent courses** forming the distance education programme are:

- **Basic Internet.** Introduction to the history of the Internet; search tools; search engines; search strategies; Internet resources; electronic journals; evaluation of Internet sources.
- **Advanced Internet.** Use of e-mail; mailing and discussion lists; newsgroups; plug-ins for radio broadcasts, song, films or TV broadcasts; multimedia.
- **Web-page design using MS FrontPage.**

The project materials were appraised as they were being developed. Riga Central Library staff evaluated the finished course, acting as students, and their main conclusions were as follows.

- The virtual learning environment of WebCT was considered traditional and unobtrusive, easily understood; logging on was easy and quick.
- The structure of the courses was clear and easily understood; the separate parts of the course were logically linked.
- The theoretical materials and exercises were graduated from simple to complicated in a logical way.
- The teaching materials were considered "excellent": extensive and useful; comprehensive information about familiar and new topics alike.
- The teaching materials were presented in an understandable form – text, tables, examples. The course includes successful links to specific Internet materials, which could be accessed at once by activating the hyperlinks.
- There is a great advantage to the illustrations, which simplified understanding of the courses and saved time.

- The exercises matched the syllabus content and the new knowledge gained in each section was needed for their completion.
- If something has been left out while doing a lesson or if there were problems with the exercises, it was easy to return to a particular section because of the good index.
- There was no problem with registering for the course.
- Communication with the teacher and with other course participants – comprehensive and very useful.
- E-mail and discussion groups were useful for communication.

The Project DELCIS could be considered as **an 'overture' to the University of Latvia (UL) e-University project, which was started in 2002 in accordance with the University's development guidelines. The DELCIS Project is one of the first UL e-courses**, so it served as a practical example for understanding the WebCT electronic learning environment.
The UL e-University project leaders have been very positive in their evaluation of all that has been done under the auspices of Project DELCIS: familiarisation with the e-environment in which students and teachers interact and course approbation. That is why the experience of the DELCIS project group was frequently used at e-learning support seminars for UL academic staff.

Dissemination

University of Latvia (LV) carried out the following initiatives:

1. adaptation of 3 distance education courses,
2. provision of training for staff members of pilot libraries,
3. dissemination activities using the following professional channels:
   - integration of the new courses into training modules of the CECLL,
   - publications in library, cultural, educational, ICT-centred press as well as electronic publications,
   - demonstration seminars for largest Lithuanian libraries,
   - demonstration seminars for academic people from different Lithuanian academic institutions using Distance Education Centre of Vilnius University as Communication channel.

Riga Central Library (LV) carried out the following initiatives:

1. testing and evaluation of the product,
2. presentation of project results in all official library documentation and venues to library users, library circles as well as policy makers and authorities.

For useful information about **the Latvian section of the DELCIS project** see:
Iveta Gudakovska - Inese A. Smith, ***CPD stakeholders in Latvia – have ten years of independence made a difference?*** *<http://www.ifla.org/IV/ifla69/papers/099e-Gudakovska_Smith.pdf>*. Paper presented at the World Library and Information Congress: 69th IFLA General Conference and Council, **1-9 August 2003, Berlin.**

For a **Europe-wide view of the DELCIS international project** see:
Distance Education for Librarians: Creating an Information-Competent Society (DELCIS) (see p. 368-371)

DELCIS - Distance Education for Librarians Creating an Information-Competent Society

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/latvia/DELCISinternational.htm*
Original website: *http://www.economicsoftware.ro/delcis1/.*

Start Date: 1 January 2001
End Date: 31 December 2002

Institutions:
- Tallinn Pedagogical University, Estonia
- ALFA D. ANAPTIXIAKI O.E., Greece
- WEGRE Development Center, Greece
- Aarhus County Library <*http://www.aakb.dk/*>, Denmark
- Vilnius County Public Library <*http://www.amb.lt/en*>, Lithuania
- Vilnius University. Faculty of Communication <*http://www.kf.vu.lt/en/general/defaultAction/*>, Lithuania
- University of Latvia. Continuing Education Centre for Librarians of Latvia (CECLL) <*http://www.lu.lv/szf/BDTC/BDTIC_anglu.htm*>, Latvia
- Riga Central Library <*http://www.rcb.lv/*>, Latvia
- Economic Software Systems Int'l SRL <*http://www.economicsoftware.ro/engleza/index.html*>, Romania
- University of Brighton. School of Information Management <*http://www.brighton.ac.uk/mis/*>, UK

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Riga Central Library, Latvia
Andra Viita
Riga Central Library, Latvia
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Economic Software Systems Int'l SRL, Romania
Margaret K. Wallis
University of Brighton, School of Information Management, UK

Distance Education for Librarians: Creating an Information-Competent Society (DELCIS)

The project has been carried out with the support of the European Community Leonardo da Vinci programme.

Project theme

The main project objective consists of devising a **distance learning programme** in the ICT field, as an active component of lifelong learning and vocational training **for library and information professionals in Lituania and Latvia.**

The project has a broad partnership of ten institutions (three universities, four public libraries, two private enterprises, and one university-enterprise), and it covers a large geographic area: Scandinavia (Denmark), Eastern Europe (Lithuania, Latvia, Estonia), Central Europe (Romania), and the Mediteranean region (Greece).

Objectives

1. To improve the quality of continuing training for library professionals by introducing development of ICT skills which are the strongest requirements of an information society and its labour market.
2. To improve access to continuing education and training for library professionals by exploiting the potential of ICT.
3. To promote flexibility of continuing training for library professionals with innovative learning practices - distance learning which enables promotion of lifelong learning practices with regard to those with restricted possibilities of learning because of age, distance, disability, etc.
4. To create the trans-national dimension of the project through trans-national co-operation during development of the product and dissemination of project results and experiences.

The project objectives have been realised by adaptation of three ICT-centred distance courses "Basic Internet", "Advanced Internet" and "Webpage Design" targeted specifically at library professionals and by incorporating these courses into continuing education programmes in Lithuania and Latvia. Courses are adapted from the Danish analogue provided by Aarhus County Library (DK).

Final results

- **Three distance education courses aimed at ICT training for library and information professionals in Lithuania and Latvia** enabling them to acquire or upgrade ICT competencies at distance have been adapted.
- Courses are **integrated into continuing education programme for library professionals.**
- **Courses have been published on the net** thus ensuring their wide accessibility and presence on the world-wide market.
- **A web-site** was created presenting project results and experiences for a world-wide audience in English, Lithuanian and Latvian languages.
- **A booklet** was published presenting project results and product characteristics in English, Lithuanian and Latvian languages.
- **Lithuanian and Latvian academic staff members** got experience, knowledge and skills necessary to develop full distance education curricula for library and information professionals.

- The Vilnius University. Faculty of Communication (LT) and the University of Latvia (LV) acquired possibility to join European and even world-wide network of distance education through diverse dissemination and demonstration activities.

Activities

I. Adaptation of the product - Duration: January 1 - June 30, 2001 (6 months)
The aim of the work-package is to adapt three Danish distance education courses in ICT competencies for library professionals "Internet for Beginners", "Advanced Internet" and "Webpage design" provided by Aarhus County Library (DK) and tailored specifically to the needs of library professionals in Lithuania and Latvia.

II. Testing and evaluation of the product - Duration: July 1 - August 30, 2001 (2 months)

III. Dissemination of the project product and results - Duration: September 1, 2001 - December 31, 2002 (16 months).

Courses

Aarhus Public Libraries in Denmark initiated in 1997 a distance education project. The idea was to examine whether it was possible to upgrade library staff's ICT competences via distance education. For that purpose three distance education courses in basic Internet, advanced Internet and webdesign were developed.
These courses form the basis of the content in the DELCIS project.

Concept of the courses

- Every course starts with an introductory meeting
- The courses are presented as HTML-documents and structured as a web-site - the lessons are published every second week
- The courses are electronic (and not available in hard-copy)
- The educational material is dynamic - updates and revisions are made continuously
- Assignments are answered via web
- Communication between teachers and participants takes place via electronic conferences and email
- Every course is evaluated and the participants get a diploma.

1. Basic Internet - 8 lessons during 4 months
Lesson 1: Introduction to Internet
Lesson 2: Browsers
Lesson 3: Search Tools Part I
Lesson 4: Search Tools Part II
Lesson 5: Search Tools Part III
Lesson 6: Meta Search Engines & Jumpstations
Lesson 7: Electronic Magazines and Newspapers
Lesson 8: Evaluation of Internet Sources

2. Advanced Internet - 4 lessons during 2 months
Lesson 1: Email - MS Outlook Express
Lesson 2: Mailing & Discussion Lists
Lesson 3: Usenet Newsgroups
Lesson 4: New facilities - Plug-ins, Multimedia etc.

3. Designing Your Library Web-Site Using FrontPage - 8 lessons during 4 months

Evaluation

Product evaluation is aimed at ensuring quality of the product and conformity to high standards. Evaluation has been carried out by following activities:

1. **Testing of the product:**
   - Twelve public librarians (six Lithuanians + six Latvians) have studied three newly adapted courses for two months,
   - Constant evaluation was made by trainees during those two months and content adapters have been informed immediately about defects noticed,
   - Final evaluation reports were provided by trainees at the end of testing period,
   - Progress of trainees was evaluated (quality of tasks performance, answers to questions, fitting to timetable, etc.).
2. **Evaluations of participants of demonstration seminars**
3. **Evaluations of distance education experts**
4. **Evaluation by comparison with similar packages presented**
5. **Evaluation as a case study materials used in training university of Brighton (UK):**
   - Triangulated feedback was provided from staff, students and external experts.

Dissemination

Dissemination of the project product and experiences has been carried out during the whole process of project implementation through the following channels and activities:

1. dissemination of information about the project and its product and demonstration seminars for Lithuanian and Latvian academic and library community,
2. oral presentations (using MSPowerPoint) at continuing education courses in Vilnius and Riga,
3. presentations of project activities and progress in professional associations at national and international level,
4. informing a wide audience about the project and its product sending press releases to the press, radio and TV,
5. publications in Latvian and Lithuanian professional press,
6. publishing of the booklet in Lithuanian, Latvian and English languages,
7. dissemination of project experiences through activities of partner institutions:
   - in the academic circles on national and European level through activities of WEGRE UETP (EL),
   - in the library network of Northern Greece through activities of ALFA D. company (EL) in co-operation with the Greek Library Association,
   - in the academic circles at the European level through the membership and activities of TPU (EE) in the European Association of Distance Teaching Universities and Estonian library and academic environment,
   - in the library and academic circles of United Kingdom through proactive activities of the School of Information Management, University of Brighton (UK).

Final Symposium
DELCIS: New opportunities to learn
Vilnius, 27 September 2002

For useful information about **the Latvian section of the DELCIS project** see:
Iveta Gudakovska - Inese A. Smith, ***CPD stakeholders in Latvia – have ten years of independence made a difference?*** *<http://www.ifla.org/IV/ifla69/papers/099e-Gudakovska_Smith.pdf>*. Paper presented at the World Library and Information Congress: 69th IFLA General Conference and Council, **1-9 August 2003, Berlin.**

DEDICATE - Distance EDucation Information Courses with Access Through nEtworks

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Dedicate.htm*
Original website: *http://educate.lib.chalmers.se/dedicate/dedindex.html*

Start Date: 1997
End Date: 1999

Institution:
Chalmers University of Technology - The Library <*http://www.lib.chalmers.se/*> (project coordinator)

Göteborg, Sweden

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DEDICATE - Distance EDucation Information Courses with Access Through nEtworks

The aim of the **DEDICATE project** is **to develop cost-effective distance education courses in information literacy.**
These are based on programs developed under the EU Telematics for Libraries Program EDUCATE project (1994-1997) and programs for networked learner support, developed under the NetLinkS project, allowing both asynchronous and synchronous communication modes.
The distance education courses have been demonstrated and tested at **four library sites in Technological Universities in Estonia, Hungary, Latvia and Lithuania** and at the **International Center for Information Management, Systems, Services, in Torun, Poland.**
The distance education programs have been directed initially to training **library staff** in the access and use of information resources in a networked environment. This was part of a programme for training the trainers - with extension to **scientists** and **engineers.** The first group of application sites was in the area of science and engineering.
These demonstrator sites have acted as catalysts for the development of user-education programmes within their respective countries.
The DEDICATE courses serve as models for distance education for libraries throughout Europe. The DEDICATE project has encouraged co-operation between libraries in western and eastern Europe.

Aims and objectives

The overall aim of the **DEDICATE** project is to develop cost-effective distance education courses in training for information literacy.
The specific objectives are as follows:
1. to produce the DEDICATE Newsletter for dissemination of information about the project;
2. to design distance education courses on Training for Information Literacy. These include an experiential module on Information Searching Project in **Physics, Energy,** or **Electronics - based on the use of the EDUCATE (Into Info) programs;**
3. to develop and test networked learner support systems for the individual course participants and their tutors;
4. to develop and test document delivery methods for course support;
5. to implement the DEDICATE courses at five sites;
6. to evaluate the courses;
7. to disseminate information about the DEDICATE project by means of presentations, conference papers and journal articles;
8. to develop a planned strategy for the exploitation of the DEDICATE Project. This includes a launch event and/or conference;
9. to submit a final report on the DEDICATE project.

Tools

Among the tools used in the DEDICATE Project there is **Into- Info - Distance Education program with subject specific modules.**
Into Info is a system of programs for learning about how to obtain and handle information in engineering, science and medicine efficiently.

The program also provides information about and links to a selection of high quality information resources for research, development and practical work.
Password is required in order to start the programs.

Newsletter

Partners

- Chalmers University of Technology - Library, Göteborg, Sweden (Coordinator)
- Helsinki University of Technology - Library, Espoo, Finland
- **Kaunas University of Technology - Library, Lithuania**
- Linköping University - Library, Linköping, Sweden
- Nicholas Copernicus University - Library, Torun, Poland
- Riga Technical University Scientific Library, Riga, Latvia
- University of Sheffield, Dept. of Information Studies, Sheffield, UK
- Tallinn University of Technology - Library, Tallinn, Estonia
- University of Veszprém - Library, Veszprém, Hungary

Library - community public information centre

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Lithuanianlibrary_project.htm
Original website: *http://www.lrti.lt/english/activities/Projects/Library.html*

Start Date: 16 September 2003
End Date: 16 October 2004

Institution:
Lithuanian Regional Research Institute <*http://www.lrti.lt/english/index.html*>

Kaunas

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Contact persons:
Rimantas Dapkus (President)
Antanas Alvikas (Director)
Jurga Bučaitė (Project manager)
Edita Naujokaitytė (Project manager)

PHARE 2001 ECONOMIC AND SOCIAL COHESION
Grant programme: professional training seeking economical and social cohesion.

Target groups: librarians and local communities of remote areas of the Kaunas County

Library - community public information centre

The project aims at promoting the information and knowledge society in remote areas, increasing the accessibility to information of these residents, creating favourable conditions for them to study and develop business.
Within this project the employees of Kaunas County public libraries have received knowledge and skills necessary for working at the public information centre. This enabled librarians to prepare for the computerisation of libraries and to proactively react to the changes in society's demands.
Library employees started applying acquired skills and knowledge under supervision and consultations of project lecturers during training-courses-seminars. To conduct these seminars there were equipped a mobile information centre, an *Infobus*, with eight computer-aided workplaces. The knowledge and information conveyed during these seminars aided the most active residents of communities to master modern information and communication means when searching for employment possibilities, helped them generate new business ideas, encourage life-long-learning and qualification upgrading.
There were established ten public information centres. Their activities have decreased the information disparities of peripheral areas and encouraged social-economic development.
As an introductory course for work at the public information centre library employees took a specialised course in information literacy and economic and management modules, focusing on the specific tasks of library activities.
Recommendations for further application of the specialised course were prepared.
The project is oriented at the library employees and local communities of remote areas of the Kaunas County, which encounter the problems of limited information search and usage possibilities.
The project has been implemented through several stages: introductory project works; training courses for librarians and the activities of a mobile information centre (*Infobus*); the establishment of public information centres and conclusive seminar-conference; dissemination of information about the project; project activity monitoring and internal evaluation, report preparation.

DELCIS - Distance Education for Librarians: Creating an Information-Competent Society - Lithuanian section

English outline in EnIL. *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/DELCISlithuania.htm*
Original website: *http://www.leidykla.vu.lt/inetleid/inf-mok/20/str9.html*

Start Date: 1 January 2001
End Date: 31 December 2002

Institution:
Vilnius University. Faculty of Communication <*http://www.kf.vu.lt/en/general/defaultAction/*>

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Distance Education for Librarians: Creating an Information-Competent Society (DELCIS) - Lithuania

In the year 2000 the Faculty of Communication - Vilnius University initiated the 2-year project "DELCIS: Distance Education for Librarians: Creating an Information-Competent Society".
The project has been carried out with the support of the European Community Leonardo da Vinci programme.
It is aimed at the creation of **three distance education courses** "Basics of Internet", "Advanced Internet" and "Web-Page design with FrontPage 2000" as **an integral part of continuing education programmes for library professionals in Lithuania and Latvia.**
Material of the courses is provided by the Aarhus County Library (Denmark). Distance education is treated as a way to improve access to continuing education for library professionals and solve problems of their competence. Huge attention is payed to the dissemination of project advances and results (publications in the press, presentations during various ventures, demonstration seminars, etc.).
In the Spring 2000 **EC Leonardo da Vinci programme launched its 1st cali of the second phase.** Content of the call matched perfectly the field of the current interest of the ***Continuing Education Centre of Library Professionals*** established in 1999 - improved accessibility to and quality of vocational training through life-long learning, use of information and communication technologies, distance education, etc.
To be able to act as providers of ICT skills for the community, librarians first have to acquire corresponding competencies themselves and have opportunity to upgrade the skills constantly. Thus **the main objective of the project is to create distance education program in ICT competencies as an integral part of continuing education for library and information professionals** in Lithuania and Latvia.

Activities and results

The objective is realised by creation of **three distance education courses** with original titles "Basics of Internet"; "Advanced Internet" and "Web-Page design with *FrontPage2000*" **oriented at ICT skills training of information professionals.** These are not original courses but the adaptation of successfully functioning Danish training products that were created by Aarhus County Library (DK), as a project of library staff competence development in the public libraries of Aarhus County. Three courses were developed tailored to the needs of the public librarians.
"Basics of Internet" consists of eight lessons and is designed to study professional Internet search. "Advanced Internet" consists of four lessons and helps learn to use different forms of electronic communication (e-mail, discussion and newsgroups, etc.) and plug-ins (AdobeAcrobat, QuickTime, etc.). The "Web-page design" course (eight lessons) helps get acquainted with the programme *FrontPage2000* and learn to create web pages. This original structure was changed in **the new products, because some new lessons or parts of lessons were introduced** (e.g. "Search in Lithuanian Internet").
Adaptation was carried out in the following steps: translation of Danish material to English; refinement and editing of the English version; translation of the material from English to Lithuanian and Latvian; tailoring of the material to local needs (links, cases, examples, etc.); transfer of the material to electronic form. Original material is presented as a web page. Lithuanian and Latvian versions are available for users via virtual learning environment *WebCT*.

Adaptation of the original product resulted emergence of **three new versions of the whole training material - English, Lithuanian and Latvian.** As final products Lithuanian and Latvian versions after testing, evaluation and final editing were incorporated into the continuing education programmes of library professionals in Lithuania and Latvia. English version emerged as an intermediate product, which was used as basis for training, refinement and adaptation.
After adaptation Lithuanian and Latvian courses **were tested and evaluated** by expert groups from Vilnius County library and Riga Central library. English version was tested and evaluated by MA students of Brighton University (UK). Manifold evaluation of the training product created the basis for its further improvement. **Training has been provided to Lithuanian and Latvian academic staff** involved in the adaptation of the product on the distance education issues **as well as to Lithuanian and Latvian library staff** involved in the testing and evaluation of the product on distance studies and evaluation techniques and strategies.

Dissemination

Whole second project year was devoted to dissemination of project results and experiences. Main dissemination channels have been publications in professional, regional and international press; presentation in conferences, seminars, fairs, info days (e.g. IT fair in Vilnius *InfoBalt*); the cycle of demonstration seminars was organised; booklet of the project was published; **the project web-site** was established with **the English presentation of the courses.**

Partnership

The huge advantage of the project and a strong prerequisite for effective dissemination activities is extensive and heterogeneous network of partners. Project partnership consists of ten different institutions: four universities preparing information professionals; three public libraries that already have an experience in application of modern ICT into library work and training of library professionals; two private enterprises working in the area of ICT, European projects, consulting and vocational training; and one non-governmental university-enterprise partnership representing universities and private enterprises from different European countries.
Project partnership satisfies not only cross-sectoral dimension but also the European one which is represented by seven countries covering different European regions: Eastern Europe / Baltic region (Lithuania, Latvia and Estonia), North Europe (Denmark), Western Europe (Great Britain) and Southern Europe (Greece and Romania).

For rich and useful information about the Lithuanian section of the DELCIS project see:
Rasa Racevičiūtė, *Through Distance Education to Information-Competent Society: Project DELCIS* *<http://www.leidykla.vu.lt/inetleid/inf-mok/20/str9.html>*. (2001)

For a **Europe-wide view of the DELCIS international project** see:
Distance Education for Librarians: Creating an Information-Competent Society (DELCIS) (see. p. 368-371)

Reading and writing for critical thinking (RWCT) project in Lithuania

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Criticalthinking_project.htm
Original website: *http://www.vpu.lt/sdc/en/proj_kmusr.htm*

Start Date: 1997
End Date: 2000

Institution:
Modern Didactics Center
(MDC) *<http://www.vpu.lt/sdc/en/index.htm>*

Vilnius

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Modern Didactics Centre (MDC) is public non-governmental, non-profit organization for non-formal adult education and in-service training. MDC was established in 1999 by initiative of Vilnius Pedagogical University and Open Society Fund-Lithuania as inter-university centre.

Reading and writing for critical thinking (RWCT) project in Lithuania

It is a project supported by Open Society Institute-New York, International Reading Association.

Before starting RWCT project in Lithuania, quality of education content in Lithuanian schools was revised and the following conclusions were made:

- **students lack skills of information search, selection and evaluation**, reflective thinking, attentive listening, debate;
- memorization of facts is prevailing as background of learning process;
- students are unable to make practical knowledge they amassed in school;
- students' creativity is restricted;
- teachers apply very few modern teaching methods in their practice;
- system of knowledge evaluation is imperfect;
- there are no evidences of information and democratic society in Lithuanian schools.

Research, made in Lithuania, shows, that many people meet problems, because of the lack of self-confidence, critical attitude towards personal abilities and capacity to reflect and make decisions. Those problems create barrier for personal and professional development. Those skills are very important for their future career and adaptation in society.

The young people must be prepared to meet challenges of the rapidly changing world and information. Developing critical thinking, as universal strategy, is still one of the biggest needs in society.

RWCT project has identified a set of consistent behaviours and characteristics in order to promote democratic interchange.

Advantages

- ***Classroom-based***
  Participants leave RWCT workshops ready to implement the strategies in their own classrooms.
- ***Flexible***
  RWCT is effectively implemented in primary and secondary classrooms, in pedagogical high schools, and in university classrooms, across many disciplines.
- ***Adaptable to local conditions***
  RWCT is designed for use with existing curricula and existing materials.
- ***Designed to build local capacity***
  Mentored by a select group of international educators, RWCT builds a corps of skilled, in-country teacher trainers giving each country the capacity for national expansion.

Aims

- To implement democratic practices in Lithuanian schools in order to promote educational reform.
- To introduce into schools strategies for interactive methods of teaching in order to prepare pupils for citizenship in open societies.
- To set up models and methods of staff professional development for teachers training.

Activities

Lithuania joined the RWCT network in 1997. The project was started under one of educational programs of Open Society Fund-Lithuania.

During the first year of the project volunteers from the International Reading Association have worked with the in-country leadership team, formed from Lithuania primary, secondary schools, gymnasiums and universities. RWCT lecturers of the first generation, able to eventually demonstrate and teach these methods to others, were prepared.

In year II, the first generation participants trained teachers of the second generation. All these teachers became a part of the local leadership core.

Since 1998 dissemination activities were started and institutionalization strategy was developed.

Forty-eight schools and education centres have participated in the project during 1997-2000, over 600 teachers from various Lithuanian schools attended RWCT seminars.

After the RWCT project end in 2000, newly established Modern Didactics Center took over the project and turned it to permanent in-service training program of the centre. MDC coordinates network of trainers, delivers RWCT courses for teachers, organizes certification processes and initiates other activities ensuring project sustainability.

International conference

Development of Critical Thinking and Teacher Training in the XXI-st century - Opportunities for Change *<http://www.vpu.lt/sdc/en/rwct_conf.pdf>*. 21-23 February 2000, Vilnius.

Project evaluation

- In 1999 the sociological survey was made to evaluate the efficiency and improvement perspectives of the RWCT project in Lithuania. Cf. the *Summary of survey.*
- In **April 2000**, the Open Society Institute commissioned the American Institutes for Research to conduct an evaluation of the RWCT project. Cf. the *Evaluation Report* - for the connection between **information**, their organisation and integration into prior knowledge and **critical thinking** see in particular p. 11 and Appendix C - p. 8-9.

RWCT centers-modelling schools

Since 1997 **four schools** joined the RWCT programme and became RWCT centers-modelling schools. These schools with a significant proportion of teacher educators familiar with RWCT methodologies serve as demonstration sites for both pre-service and in-service teachers: teachers apply RWCT methods in their lessons, deliver workshops for other teachers, and organize open lessons. They also provide the basis for students' teaching practices.

Higher education

Since the very beginning of project lecturers of Vilnius Pedagogical University were involved as project participants and advocates.

In 1998 the course "Developing of Critical Thinking in Teaching Different Subjects" was offered to Vilnius University and Vilnius Pedagogical University students as one semester duration optional credit course. Since 1999 this initiative have been prolonged only in Vilnius Pedagogical University. More than 100 students attending this course each semester.

Reading and writing for critical thinking (RWCT). A professional development project for educators

Its purpose is to provide participants with strategies for interactive methods of teaching that prepare pupils for active citizenship.

RWCT is based on the idea that democratic practices in schools play an important role in the transition toward more open societies.

The project is offered as collaboration between the Open Society Institute-New York and the Consortium for Democratic Pedagogy, which is composed of the International Reading Association's International Division and the University of Northern Iowa's Office of Education for Democracy and the Orava Project in Slovakia.

RWCT is active in the following countries:

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Guatemala, Hungary, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Pakistan, Romania, Russia, Serbia and Montenegro, Slovenia, Tajikistan, Ukraine, Uzbekistan.

RWCT introduces research-based instructional methods to teachers and teacher educators. These methods are designed to help students think reflectively, take ownership of their personal learning, understand the logic of arguments, listen attentively, debate confidently and become independent, lifelong learners.

The program can be used in all grades and subjects with existing curricula.

On the basis of Critical Thinking programme MDC developed several **international RWCT programme-based projects (2001-2006)**.

Critical thinking development in higher education

English outline in EnIL:
http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Criticalthinking_project2.htm
Original website: *http://www.vpu.lt/sdc/en/proj_kmam.htm*

Start Date: 1 January 2002
End Date: 30 September 2003

Institution:
Modern Didactics Center (MDC) *<http://www.vpu.lt/sdc/en/index.htm>*

Vilnius

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Raimonda JARIENE – Specialist of Education Development Center, teacher of S.Daukantas secondary school
Valdone INDRASIENE – Assistant professor of Department of Pedagogy at Vilnius Pedagogical University
Vida GUDZINSKIENE – Assistant professor of Department of Physiology and Hygiene at Vilnius Pedagogical University
Asta NAVICKAITE – Teacher of Center of Modern School
Danguole DAUKSIENE – Teacher of Vilnius "Vyturys" primary school

Critical thinking development in higher education

It is a project supported by Open Society Institute-New York, International Reading Association.

The project **Reading and Writing for Critical Thinking (RWCT)** (see p. 381-384) was directed to all educators - elementary and secondary school teachers and college and university lecturers. The project was mostly oriented for general education and was successfully carried out in elementary and secondary schools. Modern Didactics Center decided to elaborate long term project for higher schools.

Contemporary universities face the challenge not only to develop the system of knowledge but also the system of different skills. Didactic goals of the academic curricula of the universities must be oriented not only towards providing fundamental and applied knowledge but also towards teaching methods for different activities and problem resolution. Progressive education must rest on two foundations: learning **how to get quickly oriented in the rapidly growing flow of the information and finding what is needed**, and knowing how to think over and apply the information.

This program can help the educators meet the challenges of contemporary science, restructure teaching process, present consistent and theoretically grounded teaching methods, encouraging the students to learn actively and think critically.

Critical thinking program enables the lecturers:

- To create the atmosphere based on open and responsible cooperation.
- To use teaching framework and methods encouraging critical thinking and independent studies.

The lecturers working according critical thinking program develop students' abilities to:

- Think critically.
- Accept responsibility for their learning.
- Work in cooperation with the others.
- Acquire skills of permanent learning.

Critical thinking program does not demand preliminary preparation; the lecturers can rely on their own experience, available programs and teaching materials. The theory is closely related to practice: after the workshops the lecturers can immediately apply new teaching methods in their classes.

Aim

Project was aimed **to integrate criticai thinking training into universities' curriculum.**

Participants

The project was directed to the lecturers of the colleges and universities.

49 educators, representing the following institutions, take part in the project:

Kaunas College
Klaipeda University
Lithuanian Christian Fund College
Diauliai University
Utena College
Vilnius Gediminas Technical University
Vilnius College
Vilnius Pedagogical University
Vilnius Pedagogical College,

Activities

I STAGE – **Formation of critical thinking development teams in higher education institutions.**

Teams of higher education institutions have partecipated in the project.

Two groups of lecturers were formed from pedagogical and non-pedagogical higher education institutions.

Participants of the project passed the full 48 hrs course of Critical Thinking. During the participation in the project, the lecturers were encouraged to apply new strategies in their schools, observe the lectures led by their team members, have meetings with them and discuss their achievements and what might be changed in order to get adjusted to specific situations.

- 19-20 March, 2002 - **Workshop "Framework and Environment for Teaching Critical Thinking"**
- 29-30 April, 16-17 May, 2002 - **Workshop "Methods of Teaching Critical Thinking"**
- 2-5 July, 2002 - **Summer school: Workshop "Planning and assessment of critical thinking lecture. Development of student-orientated study programmes"**
- 24-25 September, 2002 - **Seminar for administrators of higher education institutions "Content of Contemporary Studies at University"**
  Seeking of project sustainability, it was decided to involve universities administration into the project and to deliver to them an introductory seminar. Vice-rectors and directors of study departments got acquainted with the project and had understanding about benefits of the modern critical thinking course in higher education curriculum.
- 24-25 October, 18-19 November, 2002 - **Workshop "Writing as a tool for critical thinking development. Attitudes towards scientific texts reading. Text analysis"**
- 7-9 January, 2003 - **Winter School: Workshop "Adult education".**

II STAGE – **Development of integrated and individual programmes for critical thinking teaching**

The second year of the project was devoted for analyzing of study programmes and teaching subjects from the point of view of critical thinking teaching possibility.

Lecturers chose one of those ways for individual or group activity:

- to integrate a programme of critical thinking into their subject teaching;
- to develop an optional critical thinking teaching course;
- to develop a new critical thinking course.

- 17 February, 2004 - **Final conference of the project.**
  During the conference project coordinators implemented an idea to link together experience of critical thinking development in secondary and higher education. Therefore teachers from Modern Didactics Center methodical schools – Critical Thinking centres: Vilnius "Vyturys" primary school, Vilnius Simonas Daukantas secondary school, 1st gymnasium of Silute, Moletai gymnasium – were invited to participate in conference. Project participants presented developed programmes for their colleagues as well as secondary school teachers share their long-lived experience in critical thinking education.

Project results

- Project is characterized by the unity of theory and practice, comprehensive analysis and reflection of the higher education activity.
- United critical thinking teams were organized at the Universities.
- Participants got acquainted with the methods and strategies encouraging critical thinking and were encouraged to use strategies of critical thinking while teaching their subjects.
- Project materials were issued in the publication "Critical Thinking Development in Higher Education: Study Programmes".

Critical Thinking Development in Higher Education: Study Programmes

This publication presents results developed during two years of the project – programmes of subject teaching, extended lectures plans, reflecting critical thinking teaching possibilities in different study programmes: law, accountancy, foreign languages, social pedagogy, communication etc.

Programmes are presented following one scheme: purpose of the course, place in the study programme, aims and objectives, relations with other teaching subjects, course structure, principles and methods of teaching, extended content of the course, sample lecture or seminar of the course.

Window to the future

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/lithuania/Window_future.htm*
Original website: *http://www.ivpk.lt/en_main-aktual.php?cat=31&n=19*

Start Date: 2002
End Date: April 2008

Institution:
Information Society Development Committee under the Government of the Republic of Lithuania
<http://www.ivpk.lt/main_en.php?cat=0>

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"Window to the Future" educates an e-citizen

In 2002 business companies of Lithuania announced their teaming up with the alliance "Window to the Future" which starts the implementation of a unique project on providing support by Lithuanian business companies to the development of information society. The goal is to encourage the internet usage and thus enhancing the living standards of the population of Lithuania.

Project on computer education started

The purpose of the project "Window to the Future" is to increase the computer literacy of population, encourage the competitiveness of educated persons and their groups in labour market and improve their possibilities to get information needed for their work and open wider possibilities for education.

From 6 March 2006, the alliance "Window to the Future" has been implemented the project "Fundamentals of Computer Literacy of an E-Citizen of Lithuania", sponsored by the EU.

The objective of the project: fundamentals of computer literacy provided by direct education in computer classes and knowledge about safe internet usage to 50,000 citizens of Lithuania, older than 16.

The education program has been prepared following the computer literacy standard minimal computer literacy qualification program, approved by the Government of the Republic of Lithuania, which matches with the last version of the program of the European computer user's (ECDL) program for citizens (e-Citizen).

The project has been implemented by April 2008 throughout the territory of Lithuania. The first courses have been scheduled for September 2006.

The **target group** of the project are all **the economically active citizens of the Republic of Lithuania older than 16 who have no knowledge nor skills in computer literacy or have acquired very poor skills.**

Adequate education planning services are purchased for educational process. The education takes place in computer classes that are leased out from educational institutions, and in public Internet centres.

The "E-Citizen" program has been prepared by ECDL fund following "e-Europe 2005" action plan.

The education program comprises 30 academic hours, where 19 academic hours are intended for classroom practical session, 10 academic hours for independent learning, and 1 academic hour for knowledge evaluation test.

During the course the participants acquire knowledge of the following categories:

- Fundamentals of PC usage;
- Usage of simple application programs;
- Organizing of files and folders;
- Fundaments of internet usage;
- Fundamentals of e-mail usage;
- **Information search**;
- Information protection;
- Services on the internet;
- Browsing the internet.

The project is implemented on national level – i.e. in all 60 municipalities of Lithuania.

Alfin EEES - Skills and competencies in information management for learning to learn within European Higher Education

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/Alfineees.htm*
Original website: *http://www.mariapinto.es/alfineees* (in Spanish)

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Alfin EEES - Skills and competencies in information management for learning to learn within European Higher Education

Alfin EEES is a **pilot initiative** concerning **the main generic skills and competencies related to information literacy necessary for university students**, an essential instrument for **academic purposes** and **lifelong learning**.
It is for developing information literacy of the website's users, by multiplying the e-learning opportunities and enhancing innovation and creativity.

Target group: university students
Level: basic

The **project's main aims** are:
- To provide university students with means for effectively managing their learning and information acquiring;
- To identify steps needed for obtaining information (searching, selecting, elaborating information) and for increasing students' skills in using electronic devices and resources.

The **website** proposes and lists the different skills and competencies which university students need in order to manage information from several different sources.
It also provides:
- A tutorial
- Various frameworks and models and
- A glossary.

The project
Information literacy as a key cross competency for the knowledge society
It includes the following **generic skills and competencies:**
- **Systematic**: related with the identification of the existing knowledge, the concept map, the development of group techniques for analysing information and putting it in common, skills in problem solving and decision making, skills in promoting improvements and proposing innovations.
- **Informativo-technological:** related with the use of generic software and information management, information organisation, retrieval and access in any format and support.
- **Instrumental:** related with skills in analysing, synthesising, organising, evaluating and reutilizing information.
- **Personal:** focussed on teamwork skills, integration in multidisciplinary groups, acquiring ethical issues in information handling and use.
- **Evaluation/assessment:** in order to develop students' autocritical attitudes and interaction skills with the teaching/learning system.

Project's specific objectives
- To build an **interactive gateway for learning to learn**;
- To provide university students with **analysis and synthesis skills**
- To give them **basic techniques and strategies for searching, finding and evaluating information**
- To teach **how to present and organise information**
- To develop students' skills and attitudes toward **longlife learning** and **teamwork**
- To teach how to communicate knowledge through ICTs.

A framework of competencies: a proposal

1. **Learning to learn**
   Learning skills
   Independent learning
2. **Learning to search for and evaluate information**
3. **Learning to analyse, synthesise and communicate**
4. **Learning to produce knowledge**
   Innovation and creativity
   Research skills
   Project management
5. **Learning to work together**
   Ethics
   Learning to work in teams
   Decision-making and negotiation
6. **Using technology for learning.**

E-COMS - An educational gateway to information literacy

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/Ecoms.htm*
Original website: *http://www.mariapinto.es/e-coms/index.htm* (in Spanish)

Start Date: October 2004-

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E-COMS (Electronic Content Management Skills) - An educational gateway to information literacy

E-COMS is a **pilot initiative** of **a working group** consisting of **university teachers**, in order to build **an interactive and intuitive gateway** providing **contents and tools for the development of users' information skills.**
It is specifically **targeted at university students at all levels**, from the first year to the last one.
This project was funded by the **Planning, quality and teaching evaluation Vicerectorate** (Vicerrectorado de Planificación, Calidad y Evaluación Docente), **Granada University**, and the **General Direction of Universities, Board of Andalusia** (Dirección General de Universidades de la Junta de Andalucía) **during the AY 2003-2004**.
The **interuniversity working group** is **interdisciplinary** (bibliotheconomy and documentation, psycopedagogy, informatics, firm organisation).

Target group: university students
Level: basic and advanced

This **educational gateway** aims at offering **learning methods** and **strategies** related to **information literacy:** it selects **theoretical issues** promoting cross interdisciplinary learning among **university students** and serves as **a tutorial for learning information skills and strategies** (analysis, evaluation and use of information).

Specific objectives

Through this initiative the following **key skills and competencies** are tried to be developed:

- **Knowledge skills:** by developing the strategies of analysing, synthesing, interpreting and processing;
- **Technological skills:** based on independent learning of computer tools;
- **Documental skills:** based on information management, determining information needs, planning information search, using strategies to locate and obtain information, selecting and evaluating information for decision-making;
- **Processing skills:** betting on introducing basic research techniques and methods for problem solving;
- **Communication skills:** developing skills and abilities to communicate, share and disseminate information.

Main contents

1. **Information and digital literacy: its concept and features.**
2. **The different phases of the IL process:**
   - Information needs
   - The search. How to plan the project
   - E-contents and their management
   - How information is organised, filtered and represented
   - Information searching
3. **E-contents:**
   - Their quality and evaluation
   - Publishing and multimedia projects.

Forum

Alfin Red - Information literacy forum

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/ALfinred.htm*
Original website: *http://www.alfinred.org/acercade* (in Spanish)

Start Date: 2007-

Institution:
Ministry of Culture <*http://www.mcu.es/*>.
General Directorate for Books, Archives and Libraries <*http://travesia.mcu.es/*>.
General Subdirectorate for Library Coordination <*http://travesia.mcu.es/*>

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Alfin Red - Information literacy forum

Alfin Red - A virtual community for study, research, promotion and practice of information literacy services

Alfinred is a result of the conclusions of the document ***Libraries for lifelong learning: Toledo Declaration on information literacy*** **(2006)** - see p. 167-169, where the "*Creation, maintenance and updating of a specific website on key literacies and competencies, as a resource and support centre for the fora and initiatives that are developed*" was mentioned among "*the first steps in a national information literacy promotion agenda*".

The **Alfinred Forum** has the following **objectives**:

- To create a **virtual community** in order to study, investigate promote and to put into practice information literacy services;
- To make available to professional community and citizens information, tutorials, comments and proposals for the **improvement of information skills**
- To intensify the **libraries' presence** in the digital literacy and lifelong learning policies.

Blog on information literacy

Main themes

- Information literacy activities
- Activities for children
- Audiovisual literacy
- Digital literacy
- Lifelong learning
- IL associations and communities
- Blogs
- Digital divide
- Skills and competencies
- Reading comprehension
- Training courses
- Jobs
- University students
- User education
- Pedagogical education to teach information literacy
- Information sources
- Information searching skills
- Digital inclusion
- Social inclusion
- Investigation and research
- Models for assessment of competencies
- Public opinion and information literacy
- Educational policy
- Public policies promoting information literacy
- Promotion of information literacy
- Research projects
- Reunions and meetings (conferences, courses)
- Reviews and Key texts
- Conceptual theories and models
- Online tutorials

Observatory of the Knowlegde Society within Higher Education

English outline in EnIL *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/Observatory.htm*
Original website: *http://www.uc3m.es/uc3m/inst/IAM/prueba/observatorio.html* (in Spanish)

Institutions:

- Carlos III University of Madrid. Agustín Millares University Institute of Information Science and Management <*http://www.uc3m.es/uc3m/inst/IAM/home.htm*>
- The SOCTEP research group on information policies and technologies applied to knowledge society <*http://www.uc3m.es/uc3m/inst/IAM/prueba/obs_soctec.html*>

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Observatory of the Knowledge Society within Higher Education

The Observatory of the Knowlegde Society within Higher Education is a project of the Agustin Millares University Institute of Information Science and Management and the SOCTEP research group on information policies and technologies applied to knowledge society.
The SOCTEP research group is also responsible for its creation and functioning.
Nowadays **the Observatory** is **the main action line** of **the Agustin Millares University Institute of Information Science and Management**.

Mission

The main goal of the Observatory is **to analyse, through qualitative and quantitative indicators, the evolution towards the Knowledge Society within Spanish higher education**, following the **deployment and exploitation of ICTs to support teaching, learning and research**.
This evolution has taken place within the change caused by the **European convergence in HE** (ECTS, etc.), **the new learning/teaching models** (learning based on the learner, independent, collaborative and longlife learning, changing role of the teacher, etc.), the development of **transversal competencies** connected to knowledge creation and management in the technological environment (**ICTs management** and **information literacy**), the **research** as basis of teaching, as support of the knowledge social transfer and means for the community to progress, and the **evaluation of teaching institutions** for educational performance and work placement of the students.
So the Observatory intends to transform itself into **a space to promote research, exchange of information and experiences**, for reflexion, debate, transfer and spread of knowledge related to the progress made in this field, observing the national and international initiatives for developing the Information Society.
The activity of the Observatory is bound to the **SIBIS - Statistical Indicators Benchmarking the Information Society** - a 2001-2003 project in the "Information Society Programme" of the European Commission - and the **"Action Program for the development of an Information Society in Spain: España.es"**.
It places itself among **the key services and functions of the Agustin Millares University Institute of Information Science and Management**, as **centre for promoting research, reflexion, academic debate, spread of ideas and knowledge about information literacy and the current transition from the Information Society to the Knowledge Society.**

Values and convictions

1. ICT convergence is a chance for improving information access and promoting a qualitative change in using and applying information to generate new knowledge.
2. **Learning processes in ICTs management and information literacy make this change possible, facilitating the development of competencies and lifelong learning.**
3. The University plays an essential role in these processes.

4. The monitoring of this process must be carried out not only through quantitative indicators, but also and above all through qualitative indicators related to the social impact of measures to develop the Information Society.
5. The collaboration and interaction of professionals promotes circulation, transfer and social exploitation of research results and knowledge.

Objectives

1. **To develop a stable measurement tool, based on quantitative and qualitative indicators**, in order to obtain data about the introduction of ICTs and the evolution of electronic information access and use within Spanish universities, and ICT penetration in the higher education system (ICT integration into university management, curricula, teaching and research activities); ICT impact on the development of transversal competencies connected to knowledge creation and management in the technological environment (ICTs management and information literacy), including an analysis of the educational levels relative to lifelong learning and wide university educational offer (the so-called "Adult University"); ICT impact on Virtual Learning and Discussion Communities, the development of instrumental models to represent and organise knowledge for education, the development of new didactic resources (learning objects), the university information management systems and the creation of LRRCs - Learning and Research Resource Centres; the work placement of the students as a consequence of better ICT qualification (esp. of library and information science graduates).
2. **To provide, in view of normalization, a set of IL indicators** compatible with the current national and international initiatives to develop the Information Society and to measure the progress towards the Knowledge Society.
3. **To ensure the methodological transparency, objectivity and comparability of established indicators**, in order to monitor progress and trends toward the Knowledge Society within Spanish higher education both at national level and in the broader European (and international) context.
4. **To periodically produce, publish and disseminate up-to-date data** and information on partial and global results of the Observatory's activities.
5. **To provide a space to promote knowledge about the evolution toward the Knowledge Society within Spanish higher education, the main indicators related to Information Literacy**, LIS professional competencies, to carry out benchmarking, to identify and disseminate best practices, to promote debate, cooperation and coordination of efforts in studying the evolution toward the Knowledge Society.

The DOTEINE project - Documentation and information technologies for education: instruments for information literacy and the organization of educational resources

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/DOTEINEproject.htm*
Original website: *http://doteine.uc3m.es/doteine_en.htm*

Start Date: 2003
End Date: 2006

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The DOTEINE project

Documentation and information technologies for education: instruments for information literacy and the organization of educational resources

Financed by the Spanish Ministry of Science and Technology, the main goal of this project is the development of LIS instruments for information retrieval that can be applied to the educational domain in order to promote meaningful, lifelong learning in web-based learning environments.
It has been developed by the DOTEINE research group.
The main guiding topics of this project are:

- **Evaluation of Information Literacy competencies and educational resources**
- Development of a metadata model to describe educational resources
- Development of a repository for educational resources
- Development of specific controlled vocabularies
- **Development of digital didactic materials for Information Literacy**
- **Digital library implementation in Learning Resources Centres (LRCs) and Learning & Research Resources Centres (LRRCs)**
- **Social spread of Information Literacy.**

The IACORIE project - Content analysis instruments for organizing information resources in education: learning resources centres for the Knowledge Society

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/IACORIE.htm*
Original website: *http://doteine.uc3m.es/iacorie_en.htm*

Start Date: 2005
End Date: 2005

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The IACORIE project

Content analysis instruments for organizing information resources in education: learning resources centres for the Knowledge Society

Financed by the regional government of Madrid (Comunidad de Madrid), the project has been developed **during the year 2005**.

Complementary to the DOTEINE project (see p. 403-405), IACORIE strengthened some of its phases, incorporating new researchers from other university departments or other universities, who have enriched the initial team, the DOTEINE research group.

Like its parent project, the IACORIE project was **supported by the theoretical models and documentary tools from the Documentary Languages area**.

Its specific goals are:

- To analyse the possibilities of **documentary tools to organize and retrieve Internet informational resources in Education**
- **To design a metadata model** that could be used to describe educational resources
- **To classify verb structures** to create instruments for **educational resources retrieval**
- To suggest applications of the developed instruments in specific educational settings.

The BUCRAI project: From the University Library to the Resource Centre for Learning and Research

English outline in EnIL: *http://www.ceris.cnr.it/Basili/EnIL/gateway/spain/BUCRAI.htm*
Original website: *http://www.edullab.org/pcrai/index.htm* (in Spanish)

Start Date: 2004
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The BUCRAI project

From the University Library to the Resource Centre for Learning and Research

The European convergence in HE introduced innovations in the educational models and paradigms, and this shift focuses on the following **pivotal issues:**

- From the teacher-centred education to the learner-centred education, from teaching-centred to learning-centred education, from teaching content to learning process
- From limited term learning, "learning for life" and "once and for all" to lifelong learning
- From teacher as content provider and dispenser to teacher as competency facilitator
- ICTs as new resources to support teaching and students' independent work.

Before the European convergence in HE the **REBIUN** (Red de Bibliotecas Universitarias - Network of University Libraries) identified in its strategic plan 2003-2006 as the key issue the transformation process **from traditional university library and information services to LRRCs - Learning & Research Resource Centres** (in Spanish: CRAI - CENTROS DEL APRENDIZAJE E INVESTIGACIÓN).

The shift of LRRCs-CRAI is from the 19th century library model - as book store and management - **to a new model suited to the Knowledge Society and the University Teaching & Learning Service** within the new educational paradigm resulting from the ECTS introduction.

This study aims at providing a **guide** or **an orienting document,** in order to answer the following questions:

- What is a LRRC-CRAI? How is it organised? What services must it provide and develop? What functions must it perform and develop?
- What experiences of resource centre are there abroad?
- Is there only one model or are there more than one? Do different approaches exist on their structure, organization and management?
- What are the main difficulties the Spanish universities face at present in order to realize the shift to LRRCs-CRAI?

Documents of interest on this topic are freely available online - **in Spanish:**

- **Didac Martinez,** ***The Learning Resource Centre - CRAI. The new model of university library.*** (see p. 195-197)

Links of interest on this topic are freely available online - **in Spanish.**

Questionnaires to collect information for drawing final conclusions (access restricted to project collaborators).

Work documents produced for the project (access restricted to project collaborators).

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