Consiglio Nazionale delle Ricerche

Information Literacy at the crossroad of Education and Information Policies in Europe

edited by
CARLA BASILI

Istituto di Ricerca sull'Impresa e lo Sviluppo

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PRESENTAZIONE

*Secondo Rolfo**

Negli ultimi decenni i temi dell'informazione e dell'educazione sono stati oggetto di numerosi studi di carattere economico, in particolare in relazione agli sviluppi della società dell'informazione e della conoscenza.

Per quel che riguarda l'*informazione*, si distinguono due grandi fasi nella letteratura economica sul tema: un primo periodo che prende avvio negli anni '70 dagli studi di Machlup e Porat, ed un secondo periodo che parte dagli anni '90 ad opera dell'OECD e che comprende gli studi sull'economia della conoscenza avviati da D. Foray.

L'economista Fritz Machlup è ritenuto l'iniziatore degli studi sulla società dell'informazione e sull'economia dell'informazione. Dal suo rapporto *The Production and Distribution of Knowledge in the United States* è originata, infatti, gran parte della letteratura sulle politiche ed i criteri di misurazione dell'economia della conoscenza.

Sia Machlup, sia Porat sono stati tuttavia criticati per l'arbitrarietà delle loro classificazioni delle attività basate sull'informazione che ha portato a risultati discutibili: ciò non toglie che gran parte del loro lavoro, in particolare quello di Machlup, è ancor oggi considerato seminale per l'impianto teorico della letteratura sull'argomento.

Per quel che riguarda l'*educazione*, sia l'UNESCO, per mandato istituzionale, sia altre organizzazioni internazionali, tra cui l'OECD, ne hanno largamente studiato – come è noto – l'impatto economico e sociale.

I singoli temi dell'informazione e dell'educazione sono dunque stati estensivamente affrontati dall'analisi economica, mentre il tema dell'*Educazione all'Informazione* – una sorta di loro combinazione – oggetto del presente volume non ha ancora fin qui suscitato l'attenzione degli economisti.

Non si individuano, infatti, ad oggi studi incentrati precipuamente sull'Educazione all'Informazione, sebbene in alcuni documenti OECD sia auspicata una più diffusa alfabetizzazione all'informatica (*digital literacy*), che tuttavia è condizione necessaria, ma non sufficiente per dominare

* Direttore dell'Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris) del Consiglio Nazionale delle Ricerche

l'attuale offerta di informazione, come sostiene, tra gli altri, Wadi D. Haddad della World Bank:

> *It is necessary but not sufficient to provide avenues to information and knowledge. What is more important is to empower people with appropriate educational, cognitive and behavioural skills and tools.*

L'Educazione all'Informazione può essere analizzata da più prospettive, come dimostra Carla Basili nel suo contributo introduttivo; il volume, tuttavia, approfondisce la dimensione politico-strategica del fenomeno, in particolare in ambito accademico. Non si tratta di uno studio di carattere economico, bensì di una preliminare analisi di contesto che muove dai risultati dell'Osservatorio europeo sulle politiche e la ricerca in tema di Educazione all'Informazione del Ceris, stabilito entro la rete EnIL (European network on Information Literacy) avviata e coordinata anch'essa dal Ceris.

Il volume vuole mettere in luce le politiche accademiche in tema di Educazione all'Informazione di alcuni dei Paesi dell'Europa centro-orientale, quali Estonia, Polonia, Repubblica Ceca, Romania, nonché della Grecia, accanto a Francia, Germania, Spagna e Regno Unito.

Il contributo introduttivo del curatore del volume traccia inoltre un'analisi delle attività dell'Unione Europea in tema di politiche dell'informazione e dell'educazione.

La dimensione politico-strategica dell'Educazione all'Informazione affrontata nel volume è quella attualmente meno esplorata in letteratura e proprio per questo il nostro auspicio è che questo lavoro possa costituire la base di future attività di ricerca del Ceris, tese alla definizione di indicatori per la misurazione oggettiva del fenomeno.

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CALL FOR CHAPTERS

Information Literacy at the crossroad of Education and Information Policies in Europe

EnIL Network
European network on Information Literacy
for a culture of information

European network on Information Literacy

Information Literacy is a multidimensional phenomenon, which has been intensively discussed in the literature as a skill and from the library perspective.
According to the EnIL research perspective, the volume "Information Literacy at the crossroad of Education and Information Policies in Europe" aims at improving our understanding of the strategic and policy dimensions of Information Literacy, with a special focus on developments in Higher Education.

More specifically, this volume attempts to further discussion on themes affecting Information Literacy inclusion into university curricula and crossing education and information policy issues.

Recommended topics include, but are not limited to, the following:

- national policies and programmes;
- academic policies and Higher Education penetration;
- curriculum design;
- disciplinary differences;
- recommendations and standards;
- national Information Literacy "readiness";
- research activities;
- assessment procedures;
- teacher education;
- barriers and enabling factors.

Researchers are invited to submit before **15 July 2007** the abstract of their chapter. Full chapters (4,000-7,500 words) are expected to be submitted by **15 November 2007**. References should be in APA style <http://www.apastyle.org/faqs.html>.

The book is scheduled to be published by the Italian National Research Council.
All abstracts and chapters should be submitted via e-mail in MS Word format to the editor: Carla Basili, EnIL co-ordinator, the Italian National Research Council, e-mail: c.basili@ceris.cnr.it.

Rome, 17 May 2007

Contributors

Susie Andretta
London Metropolitan University, London - United Kingdom
s.andretta@londonmet.ac.uk

Carla Basili
Consiglio Nazionale delle Ricerche (CNR). Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris), Rome - Italy
c. basili@ceris.cnr.it

Aurora Cuevas Cerveró
Universidad Complutense. Library & Information Science Department, Madrid - Spain
macuevas@ccinf.ucm.es

Sabina Cisek
Jagiellonian University. Institute of Information and Library Science, Krakow - Poland
sabina.cisek@uj.edu.pl

Michaela Dombrovská
Charles University in Prague. Faculty of Arts. Institute of Information Science and Librarianship, Prague - Czech Republic
michaela.dombrovska@ff.cuni.cz

Thomas Hapke
Hamburg University of Technology (TUHH). University Library, Hamburg - Germany
hapke@tu-harburg.de

Anthi Katsirikou
University of Piraeus. European Documentation Center, Piraeus - Greece
anthi@unipi.gr; anthi@asmda.com

Monika Krakowska
Jagiellonian University. Institute of Information and Library Science, Krakow - Poland
krakowska@inib.uj.edu.pl

Hana Landová
Czech University of Life Sciences Prague. Study and Information Centre &
Charles University in Prague. Faculty of Arts. Institute of Information Science
and Librarianship, Prague - Czech Republic
hanalandova@sic.czu.cz

Annemarie Nilges
ULB Düsseldorf & AG Informationskompetenz NRW, Düsseldorf - Germany
Nilges@ub.uni-duesseldorf.de

Maria Próchnicka
Jagiellonian University. Institute of Information and Library Science,
Krakow - Poland
maria.prochnicka@inib.uj.edu.pl

Anca Rapeanu
Central University Library "Carol I", Bucharest - Romania
rapeanuanca@gmail.com

Lisa Reggiani
Consiglio Nazionale delle Ricerche (CNR). Istituto di Ricerca sull'Impresa
e lo Sviluppo (Ceris), Rome - Italy
l.reggiani@ceris.cnr.it

Petra Šedinová
Masaryk University. Faculty of Education. Central Library, Brno - Czech Republic
sedinova@jumbo.ped.muni.cz

Ludmila Tichá
Czech Technical University in Prague. Faculty of Mechanical Engineering.
Central Library, Prague - Czech Republic
Ludmila.Ticha@fs.cvut.cz

Sirje Virkus
Tallinn University, Tallinn - Estonia
sirvir@tlu.ee

Josep Vives i Gràcia
Government of Catalonia. Ministry of Culture and Media.
Subdirection of Libraries, Barcelona - Spain
josepvives@gencat.cat

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INTRODUCTION

Memoria scritta, memoria stampata e le diverse forme della memoria elettronica – quest'ultima con problemi di conservazione ancora irrisolti – coesistono oggi a formare un universo informativo multiforme, vastissimo ed in continua crescita. All'esplosione dell'informazione si aggiungono l'ininterrotto sviluppo delle tecnologie dell'informazione e della comunicazione e la recente irruzione della società dell'informazione; la diffusione di internet come fenomeno di massa e quella della rete come principale struttura organizzativa e cognitiva delle punte avanzate della riflessione e della ricerca.

*Fronteggiare l'*information overload, *ed anzi sfruttare appieno le immense possibilità dell'offerta attuale, implica saper dominare questa mole gigantesca, diversificata e in costante trasformazione; vale a dire essersi dotati della capacità di orientamento e di scelta tra le diverse risorse informative e tra i diversi strumenti di accesso a tali risorse. Si tratta della "Cultura dell'informazione"* (Information Literacy), *una competenza metodologica e trasversale ad ogni attività intellettuale, e dunque di larga applicabilità.*

La dichiarazione di Alessandria del novembre 2005, emanata congiuntamente dall'Unesco, dallo statunitense Forum on Information Literacy *e dall'IFLA, sottolinea la centralità di tale competenza per "imparare ad imparare", cioè per sviluppare l'autonomia dell'apprendimento, facendone il fattore chiave dell'educazione permanente, cruciale sia per l'inclusione sociale degli individui che per lo sviluppo delle nazioni. Si comprende perciò come dalla dimensione educativa individuale si passi immediatamente a problemi sociali d'importanza decisiva, di politica scientifica, di scelte istituzionali, di indirizzi di governo nazionali e internazionali.*

Recita infatti la dichiarazione di Alessandria che "un investimento forte e deciso nelle strategie per la cultura dell'informazione e l'educazione permanente può creare valore pubblico ed è essenziale per lo sviluppo della società dell'informazione".

Proprio per far sentire una "voce europea" nel dibattito sulla Information Literacy, *dominato da oltre un decennio dalle iniziative statunitensi, nasce nel 2001, per iniziativa di Carla Basili, il progetto* EnIL - European network on Information Literacy, *che non a caso sorge come rete tematica di avanguardia entro la linea di ricerca "Comunicazione scientifica e valorizzazione dei risultati della ricerca" del Ceris-Cnr. Se negli Stati Uniti la politica nazionale sostiene la cultura dell'informazione, in Europa la sua*

promozione viene perseguita soltanto in forma episodica e frammentata, con duplicazione di sforzi ed investimenti. Allo scopo di colmare un vuoto culturale, che è anche e soprattutto un divario educativo, politico e scientifico, EnIL si propone i seguenti obiettivi:

- *costituire una sede di aggregazione e dibattito tra esperti della EU27 nel settore della cultura dell'informazione;*
- *concordare entro la rete EnIL una comune agenda di ricerca e le condizioni per condividere metodologie, strumenti e risultati raggiunti dalle singole nazioni;*
- *sviluppare un sistema di valutazione e certificazione delle competenze in tema di informazione della popolazione studentesca universitaria in Europa;*
- *sperimentare una patente europea dell'informazione* (European Information Driving License – *EiDL), analoga alla patente europea del computer (EcDL);*
- *avviare dei progetti pilota nazionali di patente dell'informazione.*

La rete EnIL, inoltre, è tra i membri fondatori della International Alliance on Information Literacy, *sorta nel solco dalla dichiarazione di Praga del 2003* "Towards an Information Literate Society", *che auspicava appunto la costituzione di un organismo internazionale teso a* "facilitate the sharing of information and expertise on information literacy across regions and nations of the world".

Uno dei filoni principali di attività, l'Osservatorio europeo sulle politiche e la ricerca nel settore, mette a fuoco in particolare da un lato le politiche – documenti ufficiali, provvedimenti legislativi, interventi di natura eterogenea – attuate dalle diverse istituzioni nazionali e comunitarie, dall'altro i progetti di ricerca, e conserva un punto di vista privilegiato sulla formazione universitaria. Esso tende a convergere su tre concetti nodali, che si combinano variamente nel panorama europeo: Informazione, Educazione *e* Politiche *(europee, nazionali, locali, accademiche, scolastiche).*

*Il volume si colloca nel medesimo orizzonte scientifico. Polarizza anzi ancor più la sua attenzione su tale triade, tentando di investigare un campo finora assai poco indagato in Europa, e cioè gli aspetti strategici e politici dell'*Information Literacy *nella poliedrica realtà comunitaria e la sua intrinseca duplicità, davvero "all'incrocio delle politiche dell'educazione e dell'informazione".*

Un ambito tanto specialistico si rivela così di interesse generale, dato che coinvolge la società tutta nelle sue dinamiche fondamentali: tematiche prettamente documentarie e d'informazione scientifica s'intrecciano con gli orientamenti della politica scientifica e con il suo impatto sul progresso civile, con le tendenze prevalenti delle politiche educative, con il differente grado di consapevolezza e di sensibilità sociale ed istituzionale riscontrabile ai diversi livelli nei vari Paesi.

MAURIZIO ROCCHI,
Responsabile della sede di Roma
dell'Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris)
del Consiglio Nazionale delle Ricerche

INFORMATION AND EDUCATION POLICIES IN EUROPE: KEY FACTORS INFLUENCING INFORMATION LITERACY ACADEMIC POLICIES IN EUROPE

*Carla Basili**

Abstract

Information Literacy is a multidimensional phenomenon, intensively discussed in the literature as a skill and from the library perspective rather than as a policy issue. This is the main reason why in 2001 the author started the European network on Information Literacy[1] (EnIL), with a research perspective focusing on the policy and research dimensions of Information Literacy and special interest in developments in the European Higher Education area.

More specifically and according to the EnIL perspectives, the paper analyses Information Literacy as an issue regarding both education and information policies and discusses items related to the inclusion of Information Literacy in Higher Education curricula.

The cross-borders view of Information Literacy – between Information and Education policies – widens the concept of Information Literacy, traditionally limited to the Information policy scope.

Such a wider perspective is required due to a number of influential factors arising from the full establishment of the so-called Information Society, such as the mass access to information, the uncontrolled production process of

* Consiglio Nazionale delle Ricerche (CNR). Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris), Rome - Italy

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

large amounts of information, the constraints imposed on Higher Education by the market and by a new kind of demand from the labour market.
After a look at Higher Education developments and trends, a set of building blocks for the "Bologna Process" applied to Information Literacy is outlined in the last section of the paper.

Keywords: Information Literacy – information policies – academic policies – Europe – Bologna Process

1. Information Literacy as a cross-domain issue of Education and Information Policies: rationale and background

The "Information Literacy flag" has been traditionally raised by the Library community. The major discussion lists on the topic[2] are habitually attended by librarians and give rise to very interesting discussions and ideas. It is worth noting that academics are the "great absentees" from the Information Literacy discourse. A recent survey in the UK about the academic perception of IL "... illustrates the complexity of English academics' conceptions of information literacy and informs academics' use and understanding of information literacy".[3] The aforementioned complexity attains also to policy measures extending over different spheres of authority, as testified by seminal initiatives dated forty years back.

1.1 Lessons from the past: awareness, vision and perspectives in the 1970s

Information Literacy has traditionally fallen into the Library and Information Science (LIS) discourse, even before the coining of the term "Information Literacy" by Paul Zurkowsky[4]. In fact, a need for "training of

[2] ILI-L discussion list by the American Library Association (http://lists.ala.org/wws/info/ili-l), LIS-INFOLITERACY by the British JISC - Joint Information Systems Committee (LIS-INFOLITERACY@JISCMAIL.AC.UK), InfoLit-L which is the IFLA Information Literacy Section Discussion List aimed at providing a forum for the international library and educational community to discuss and share information literacy ideas, documents, and experiences. (infolit-l@infoserv.inist.fr).

[3] Boon, S., Johnston, B., & Webber, S. (2007). A phenomenographic study of English faculty's conceptions of information literacy. *Journal of Documentation, 63*(2), 204-228.

[4] Zurkowski, P. (1974). *The information service environment: relationships and priorities.* Washington, DC: National Commission on Libraries and Information Science. Government Printing Office, 1974 (Report ED 100391).

scientists in information processes – promotion of programmes for the training of scientists in the newer technologies of information transfer" was already recognised in 1971 as the third priority of Unisist, a Unesco and International Council of Scientific Unions (ICSU) programme aimed at building a World Science Information System[5]. The point was even more vigorously emphasised by Natis (National Information Systems), a programme complementary to Unisist, launched by Unesco in 1974 and focused on national Information Policies development. It is remarkable indeed to read the title of a section like *"Planning for an* informed society*"* in documents dated 1975[6], and this should be given careful consideration. The importance of educating the users of information was already clearly perceived at that time, as well expressed by the following passage:

> *"Information like the oxygen in the air is a universal resource. However, whilst everyone is born with apparatus to use oxygen, we are not born with the ability to use information. Moreover, whilst it is obvious when men suffer for lack of oxygen, it is generally not at all obvious when there is a failure due to the non-use of information. So the first requirements of any Natis plan is to present the concept that information is an important resource and that, like the oil under the earth, we have to provide apparatus to extract it and learn how to use it."* (Urquhart, 1975)

A major concern of the Natis programme was the definition of guidelines for National Information Policies, aimed at developing national information infrastructures, where users are considered the fulcrum of the whole infrastructure.

> *"An adequate system to provide access to information should include the following features:*
> - *potential users would be regarded as part of the system. Their education would assist them to diagnose their problems and be such that they would not fear revealing their ignorance when seeking assistance.*
> - *The educational system would recognise, as Johnson said, that: 'Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it'*[7]*."*

[5] Unesco-Icsu. (1971). *Synopsis of the feasibility study on a World Science Information System.* Paris: Unesco, 92 pp. Recommendation 12.

[6] Unesco. (1975). Natis: National Information Systems, COM-74/Natis/3 Rev., Paris: Unesco.

[7] Urquhart, D.J. (1975). *Developing a National Information Policy. A NATIS guideline.* Unesco, 24 pp. The issue of user education is at the top of the list of priorities for "Developing the Information Plan": 1. improving the education of potential users; 2. the training of librarians and information officers; 3. improving access to existing services; 4. improving and expanding existing services; 5. creating new services.

Furthermore, it is worth mentioning two other initiatives by Unesco, specifically devoted to the issue of user education:

- the Unisist Manual "Education and training of users of scientific and technical information. Guide for teachers", designed in 1973 and published by Unesco[8] in 1977,
- and the Seminar on the Education and Training of Users of Scientific and Technological Information, held in Rome in 1976 and hosted by the Unisist national focal point in Italy, the Institute for Studies on Scientific Research and Documentation of the Italian National Research Council[9].

The creation of guidelines for developing a National Policy on User Education in Information Use and their outline was among the recommendations of the Seminar in Rome. Such guidelines were released in 1981 by T. D. Wilson on behalf of Unesco-Unisist and can be considered as a seminal and comprehensive work still valid today, except for the necessary adaptations to the current configuration of the information universe.

A fundamental distinction drawn in the Guidelines is between the concepts of "education" and "training" applied to information use.

> *"In this document 'education' is assumed to be concerned with instilling values, attitudes and motivations, whereas 'training' is taken to be concerned with teaching skills*[10]*."*

As to the education concept, the Guidelines recognise that it is functional to:

- Increasing the awareness of the value of information resources (key groups in national planning and development);
- Permeating all levels of the education system (all learners in the formal cycles of education);
- Making scientists aware of how to best make use of information resources and tools (scholars and researchers);
- Encouraging the idea that information has value in decision making (occupational groups);
- Paying particular attention to the need for information in everyday life (citizens).

[8] Evans, A.J., Rhodes, R.G., & Keenan, Stella. (1977). *Education and training of users of scientific and technical information; UNISIST guide for teachers.* Paris: Unesco, 143 p.

[9] Unesco. (1977). *Final report of Unisist Seminar on the Education and Training of Users of Scientific and Technological Information, Rome, 18th-21st October 1976.* Paris: Unesco (SC-77/WS/22).

[10] Wilson, T.D. (1981). *Unisist Guidelines for Developing and Implementing a National Plan for Training and Education in Information Use.* Preliminary version. Paris: Unesco (PGI/80/WS/28).

In brackets are the target communities for each goal and it is easy to note that no one is excluded from the scope of the education process.

1.2 The need for correlating Information and Educational Policies today

The previous section illustrates Unesco's influential view of user education in the 1970s, when user education was conceived essentially within the context of national information policies, despite the fact that a number of Unisist and Natis recommendations were at that time formulated as to how the education system should be accordingly modified. In brief, it was a voice from the LIS[11] group, and – as such – it could have a minor influence over the Education domain.

Furthermore, the whole Unisist programme was addressed to users of Scientific and Technical Information (STI), mainly scientists, researchers, and academic staff. Therefore, the two fundamental pillars of Unisist - STI and its users - were "elements" of controlled quality. Since then, a number of driving forces has significantly affected and transformed the information environment and its *consumers*, so much so that an increasing involvement of the education system was called for. Among the factors having a major impact on the information environment it is worth mentioning:

- the mass access to information through the Internet;
- the need for lifelong learning;
- the increasing proportion of available information with a non-controlled production life-cycle;
- the proliferation of information services and tools;
- the prevalence of intellectual, i.e. information intensive, activities over manual activities.

These factors call for a resolute broadening of the traditional idea of library user-education, in terms of four main factors:

- *Extent of the intervention*: a mass-problem calls for a mass-solution;
- *Target population*: not only library users, but users of whatever kind of information resources;

[11] LIS stands for Library and Information Science.

- *Information environment*: not only scientific and technical information;
- *Competences to be transferred*: not only information retrieval but also information analysis, evaluation, synthesis and communication.

In brief, the Information Literacy problem is greater today than in the 1970s in each dimension: scale, target, matter and result. It is, therefore, an Information Policy problem which also enters the sphere of influence of Education policies. Consequently, given its scope and quality, we believe that the LIS community cannot cope with this problem as the main agent but only as a facilitator.

2. European Union Information and Education policies

The European Union policies are supposed to have a large impact on national policy-making. Therefore, a synthetic account of European Union (EU) policies in both Information and Education areas is given below. Part of our reasoning is based on the analysis of Eurovoc, "a multilingual thesaurus covering the fields in which the European Communities are active: it provides a means of indexing the documents in the documentation systems of the European institutions and of their users. The European Parliament, the Office for Official Publications of the European Communities, the national and regional parliaments in Europe, some national government departments and European organisations are currently using this controlled vocabulary"[12]. Since it represents the lexicon of the EU, Eurovoc is a powerful means to understand how the EU conceives, articulates, and represents problems and facts.

2.1 European Union information policies

Meaningfully for our reasoning, the EU Directorate General on Information Society is the one responsible for Information Policy making.

The definition of the term "Information Policy" in the Eurovoc thesaurus can give a rough indication of how the EU articulates the concept (the main pillars of the discourse).

[12] http://europa.eu/eurovoc/.

information policy
MT3231information and information processing
NT1access to information
NT2confidentiality
NT3State secret
NT2digital divide [V4.2]
NT2limited circulation
NT1centralisation of information
NT1information industry
NT1information society
NT1law relating to information

RTinformation science (3606)

An efficient framework for analysing the EU Information Policies is what we call the "3Cs model"[13]. According to this model, the main axes along which an efficient information policy articulates are:

- ***Connectivity***: measures aimed at creating a well-established 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 assuring that reliable information is conveyed to "connected" users;
- ***Competencies***: measures aimed at assuring that "receivers" are able to efficiently retrieve and fully exploit the conveyed information.

Over the last decades, the EU information policies have been carried out through a number of Programmes, which we will attempt to place within the 3Cs Framework in order to better understand their underlying logic.

a) Connectivity

In the first half of the 1990s, the EU indicated the development of the so-called "Information Highways" as a major priority. Background documents in this area of intervention are: the *Delors White Paper on Growth, Competitiveness, and Employment* (Nov. 1993)[14], the *Bangemann Report – Europe and the Global*

[13] Basili, C. (2005). EnIL: una rete per la Cultura dell'Informazione in Europa. *Arbido, 20*(3), 15-16.
[14] European Commission. *Growth, competitiveness, and employment. The challenges and ways forward into the 21st century.* COM (93) 700 final. Brussels: 05.12.1993.

Information Society: Recommendations to the European Council (May 1994), and the influential report *Building the Information Highways to re-engineer Europe* (June 1994), produced by the Information Infrastructures working group of the European Round Table of Industrialists.

In 2000, the European Commission launched the *eEurope initiative*, with the aim of accelerating Europe's transition towards a *knowledge based economy* and to attain – among other results – a better access for all citizens to the new services of the information age.

The first phase of eEurope was the *eEurope 2002 Action Plan*, which focused on exploiting the advantages offered by the Internet and therefore on increasing connectivity. In June 2002, the European Council launched a second phase, the *eEurope 2005 Action Plan*, which focused on exploiting broadband technologies to deliver online services in both the public and the private sector[15].

The initial goal of the 1990s regarding the Information Highways was a series of successive actions by the EU, culminated in 2005 with the initiative *i2010 - A European Information Society for growth and employment*[16].

i2010 is the EU **policy** framework for the information society and media, based on the recognition of the positive contribution that information and communication technologies (ict) can make to the economy, society and personal quality of life.

Given the importance of ict for today's economy, i2010 is a key element of the Lisbon Strategy for growth and employment[17].

b) Content

With respect to the content carried through the network, the first issue tackled by the EU was the information industry in Europe with its problems of fragmentation in different languages and technical, legal, and administrative barriers. Therefore, in July 1988, the Commission of the European Communities launched an Information Market Policy Action (IMPACT) programme to promote a common European market of online information services. Part of the Impact programme was the establishment of the Information Market Observatory (IMO), with the purpose of carrying out

[15] http://ec.europa.eu/information_society/eeurope/i2010/archive/eeurope/index_en.htm.
[16] http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm.
[17] *ibidem.*

surveys on both users and providers of information services[18], and of the European Commission Host (ECHO), the forerunner of today's Cordis service.

The Impact Programme (1988-1995) was made up of two phases: IMPACT 1 (1988-1990), focused on the supply side of the European information market, and IMPACT 2 (1991-1995), which focused on the demand side and was hence related to the issue of accessing information, and, consequently, to the Information Literacy discourse. In fact, the core theme chosen for the Impact 2 phase was "*Info Euro Access*", i.e. improving the accessibility of information at the European level for all interested parties.

Among the action lines of the IMPACT 2 programme, for the purposes of our reasoning it is worth mentioning the one aimed at "Increasing user-friendliness and improving information literacy". In fact, it was within this action line that the Dedicate project was developed, as will be illustrated in the next section.

The Impact programme was the first of a number of Programmes specifically devoted to the problems of information in the current society. Impact, in fact, was followed by:

- *Info 2000* (1996-1999): programme aimed at stimulating the development of a European multimedia content industry and at encouraging the use of multimedia content in the emerging information society.
- *eContent* (2001-2004): programme aimed at stimulating the development and use of European digital content on the global networks and at promoting linguistic diversity in the Information Society.
- *eContentplus* (2005-2008): programme aimed at making digital content in Europe more accessible, usable and exploitable.

c) Competencies

It must be said outright that the term "information literacy" is absent from the Eurovoc Thesaurus. This means that it is absent from the institutional lexicon of the European Union, while the term "digital divide" has only recently been added (in version 4.2 of Eurovoc).

The Action line "Increasing user-friendliness and improving information literacy" of the Impact Programme – mentioned in the previous section – is of major importance for our analysis, and for two main reasons: its focus on

[18] Westhoff, J. (1993). The EEC Electronic Information Services Market. *Government Information Quarterly, 10*(3) http://www.lib.auburn.edu/madd/docs/giq/10_03.html.

Information Literacy and its position within a community programme devoted to Information Policy. In the EU view, therefore, it forms a link between Information Literacy and Information Policy, thus confirming Unesco's original view.

DEDICATE (1998): *Distance EDucation Information Courses with Access Through nEtworks*[19] is among the projects funded within the IMPACT Programme.

It is important to point out the library matrix of the project: in fact, Dedicate took off from the results of EDUCATE – a project funded under the EU Telematics for Libraries Programme, Third Framework[20]. According to the description of the project published on its website:

> *"The aim of the* DEDICATE *project is to develop cost-effective distance education courses in information literacy. These will be based on programs developed under the EU Telematics for Libraries Program* EDUCATE *project and programs for networked learner support, developed under the NetLinkS project, allowing both asynchronous and synchronous communication modes. Support will also be provided in the form of document supply.*
>
> *The distance education courses will be 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 will be directed initially to training library staff in the access and use of information resources in a networked environment. This will form part of a programme for Training the trainers - with extension to scientists and engineers. The first group of application sites will be in the area of science and engineering.*
>
> *As a result of the* DEDICATE *project, it is hoped that these demonstrator sites will act as catalysts for the development of* user-education *programmes within their respective countries. It is also envisaged that the* DEDICATE *courses will serve as models for distance education for libraries throughout Europe. The* DEDICATE *project will encourage co-operation between libraries in western and Eastern Europe.*[21] "

Looking at the 3Cs framework proposed at the beginning of section 2, it has to be noted that, while the policy initiatives related to Connectivity and Content are the domain of the Directorate General on Information Society (former DG XIII), the policy initiatives related to Competencies are under

[19] http://educate.lib.chalmers.se/DEDICATE/dedindex.html.

[20] EDUCATE http://educate.lib.chalmers.se/. Into Info is a system of programs for learning about how to efficiently obtain and handle information in engineering, science and medicine.

[21] From the project web site at http://educate.lib.chalmers.se/DEDICATE/dedindex.html.

the control of the Directorate-General for Education and Culture. An Education project, like Dedicate, which is funded under an Information programme (Impact 2), constitutes an example of cross-responsibility of two different Directorates and it is, in our view, a very singular case, considering the rigid boundaries existing among the jurisdictions of the different EC Directorates. Such boundaries could explain – to some extent – why the EU has not yet promulgated a comprehensive IL policy.

2.2 European Union Education Policies for Higher Education

a) General trends in Higher Education

Over the last decades, a significant transformation has occurred in the organisation and operation of the university system: a shift from a self-referential, auto-regulatory management to a market-driven regime.

As suggested by Williams (Williams, 2004)[22], Clark's "triangle of co-ordination" can be a useful tool to illustrate and understand the main factors influencing the transformation of higher education.

In Clark's opinion, the driving forces affecting any university are: academic authority, the state, and the market (Clark, 1983)[23].

Each factor generates different and competing pressures on the management of universities (Williams, 2004[24]). Academic authority is mainly oriented towards scientific excellence and recognition, therefore concentrating on research more than on teaching. The state is mainly concerned with achieving and assuring the collective interests of citizens. The market "reflects the aggregation of the choices of millions of individual people". In practical terms "individuals and their families buy higher education and this gives them the right to influence the nature of what they are buying. Universities prosper if they are seen as providing efficiently what the consumers want." (Williams, 2004[25])

In Europe, until the beginning of the 1980s, the traditional model of

[22] Williams, G. (2004). The Changing Political Economy of Higher Education. In M. Shattock (Ed.), *Entrepreneurialism and the Transformation of Russian Universities.* Paris: UNESCO International Institute for Educational Planning.

[23] Clark, B.R. (1983). *The Higher Education System: Academic Organization in Cross-National Perspective.* Berkeley: University of California Press.

[24] *Ibidem.*

[25] *Ibidem.*

Higher Education was controlled by "academic authority" and supported by regular state funding, with very few requirements of accountability.

In the same period, instead, Russian Higher Education was under the complete control of the state and universities in the USA were significantly market-driven.

Each model has its own pros and cons, but this point will not be discussed here. What has to be pointed out is that today universities are "on the market" and this generates a number of consequences in academic strategies and policies.

These trends are confirmed for the European Higher Education system by the position of the European Commission, expressed through a number of official documents. Among these is the Communication "Delivering on the modernisation agenda for universities: education, research and *innovation*"[26], which underlines the "*interlinked roles of education, research and innovation*" played by universities and states that Higher Education is a "crucial sector of the *economy* and of society".

The Communication calls for a breaking down of the barriers around the universities of Europe in terms of[27]:

- comparable qualifications (short cycle, bachelor, master, doctorate);
- flexible, modernised curricula at all levels which correspond to the needs of the labour market;
- and trustworthy quality assurance systems.

b) Main axes of the EU Education Policies for Higher Education

For the scope of our reasoning, the analysis of the EU Education Policies will focus on selected aspects that have a major impact on Information Literacy policy development.

Within the context of the *Lisbon strategy for growth and employment*[28], a role for the Higher Education system has been recognised as a major player in the Europe of Knowledge. To date, the Commission has pointed to three broad areas of possible reform in Higher Education[29]:

- curricular reform;

[26] "Delivering on the Modernisation Agenda for Universities: Education, Research and Innovation", COM(2006)208 final, 10.5.2006.
http://ec.europa.eu/education/policies/2010/doc/comuniv2006_en.pdf.

[27] *ibidem.*

[28] http://europa.eu/scadplus/glossary/lisbon_strategy_en.htm.

[29] EC DG Education and Culture. *From Bergen to London. The contribution of the European Commission to the Bologna process.* May 2007, 36 pp.

- governance reform;
- funding reform.

The area of major concern for IL is the curricular reform, where a number of elements must be considered:

- learning outcomes: curriculum innovation based on learning outcomes;
- recognition of informal learning;
- flexible, modernised curricula at all levels which correspond to the needs of the labour market (transversal skills).

A Commission-supported project, called Tuning Educational Structures in Europe[30], is aimed at developing common reference points for curricula on the basis of competences for a series of subject areas[31].

Two pillars of the Tuning project are *learning outcomes* and *competences*, which are distinguished as follows:

> *"Learning outcomes are formulated by the academic staff and are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies, for example, a first or a second cycle programme. Learning outcomes specify the* ***requirements*** *for award of credit.*
>
> *Competences are developed during the process of learning by the student. They represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competences is the object of educational programmes. Competences will be formed in various course units and assessed at different stages."*

Of particular interest to IL is the Tuning distinction between two categories of competences: subject-specific and **generic competences or transferable skills**. We do agree with Tuning's recognition that:

> *"generic competences are becoming more and more relevant for preparing students well for their future role in society in terms of employability and citizenship.*
>
> *Tuning distinguishes three types of generic competences:*
>
> - *Instrumental competences: cognitive abilities, methodological abilities, technological abilities and linguistic abilities;*

[30] www.tuning.unideusto.org/tuningeu/.

[31] (May 2008) 27 fields of study and work: Agriculture, Architecture, Arts, Business, Chemistry, Civil Engineering, Computing Science, Earth Sciences, Education, European Studies, Food Studies, Geodetic, Geography, History, Humanitarian Studies, Landscape Architecture, Languages, Law, Mathematics, Medicine, Music, Nursing, Occupational Therapy, Physics, Political Science, Radiography, Social Work, Sport Science.

- *Interpersonal competences: individual abilities like social skills (social interaction and co-operation);*
- *Systemic competences: abilities and skills concerning whole systems.*

In Tuning competences are described as reference points for curriculum design and provide a common language for describing what curricula are aiming at."

3. Information Literacy and the Bologna process

Summing up the analysis carried out in the previous sections of the paper, we can identify a number of factors to be taken into account in the definition of Information Literacy academic policies.

Looking at IL from a socio-political perspective, a problem arises within the sphere of Education Policy, in addition to the Information Policy domain, since a mass intervention is required. As for the Higher Education context, major efforts should be made to achieve the inclusion of IL in the curricular reform of the Bologna process and in the Tuning course of actions.

The whole process should be based on the following underlying assumptions:

"The Culture of Information is a discipline in its own right and independent from any other subject discipline;

From a cognitive perspective, information skills have to be regarded as learning outcomes and as a kind of methodological competence.[32]

As a discipline, IL should be included within the Bologna process both as a learning outcome and as a methodological competency. In this respect, according to the Tuning procedures, it should draw both on the well-established procedures for assessing IL learning outcomes (see, for example, the SAILS project) and on equally well-established competency models (like the Sconul and the ACRL models for Higher Education).

4. Concluding remarks

The paper has highlighted a number of issues relating to Information Literacy policy development in the European context. Some of these are

[32] Basili, C. (2008). Theorems of Information Literacy. In C. Basili (Ed.), *Information Literacy at the crossroad of Education and Information Policies in Europe* (pp. 33-52).

global trends in nature and they relate to the need for a greater market orientation of knowledge and, as a consequence, of the academic environment. Others are technology and labour market driven and call for a greater emphasis on transferable competencies and flexibility.

While much of the rhetoric in the literature for a widespread diffusion of IL has focused on fundamental needs and problems of the Information Society (active citizenships, active learning, life-long learning, information overload, information smog, information divide, ...), in practice, however, data to support these beliefs are still limited and the development of indicators relevant to the advancement of public policies is still in its infancy.

Legitimating IL within Higher Education in Europe means integrating it within the ongoing Bologna Process reform. This is not a task which – we wish to reiterate – librarians can cope with, as it is outside their sphere of influence.

The lack of an EU-wide approach to IL policy persists, while heterogeneous and fragmented approaches prevail in European countries, despite the fact that a number of recognised procedures and standards for the assessment and definition of information skills are available and could greatly facilitate the task of including IL in the European Higher Education curricula.

Therefore, a major nodal point (and a major barrier) seems to be the insufficient awareness among policy makers of the IL problem. Breaking down this barrier may perhaps imply a very rapid starting of the whole process, which has been hoped and called for since the 1970s.

THEOREMS OF INFORMATION LITERACY*

*Carla Basili***

Abstract

The paper recognises that the universe of discourse on Information Literacy (IL) has to be stratified into different layers. The proposed stratification can be of use both for a theoretical systematisation of the issue and for identifying a sequence of measures aimed at an effective propagation of a Culture of Information. The paper presents a mathematical-like approach, which starts by proposing the definitions of some basic concepts and then proceeds with 10 propositions or theses, each supported by a number of argumentations.
The proposed theses are generated by the following analysis perspectives of the Information Literacy phenomenon, and accordingly grouped:

*a) **Disciplinary perspective***: analysis of Information Literacy as Culture of Information and as a form of study of information;

*b) **Social/political perspective***: analysis of Information Literacy as an educational policy goal;

*c) **Cognitive perspective***: analysis of Information Literacy as a form of personal competence.

As a consequence of the proposed theses, the following *foci* of the Information Literacy discourse are identified:

- Information Literacy rationale (theses 1,2,3);
- Policy awareness (theses 4,5,6);
- Planning and implementation (theses 7,8,9);
- Individual development (thesis 10).

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** Consiglio Nazionale delle Ricerche (CNR). Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris), Rome - Italy

Against this background, the paper will explore how the distinction between different stratifications – by trying to give order to the reasoning about the issues concerning literacy in information – can facilitate the identification of a set of variables to be taken into account in defining a coherent strategy towards making Information Literacy legitimate within the European Higher Education context.

Keywords: Information Literacy – Information Literacy analysis – disciplinary, political, cognitive dimensions of Information Literacy

1. Introduction

Nearly twenty years after the historic ALA report[3], in which Information Literacy (IL) is defined as "the ability to access, evaluate and use information from a variety of sources", the configuration of discourse about the IL phenomenon appears focused around the following key issues: the promoter community of the IL problem is the librarian one; in the Library and Information Science (LIS) field, a large consent about IL importance does exist but a universally accepted definition of the concept is still lacking; outside the LIS community a very scarce awareness of the question and of the distinction between the concepts of "Information" and "Informatics" persists and prevails; a great number of self-teaching tools has been developed, in the form of tutorials, mostly by the initiative of libraries; a great amount of specialised literature about IL is available, however there is need for agreement about concrete actions, agents and ways for an effective embodiment of the IL objective. The IL territory has been ironically defined as "the IL land of confusion"[4].

In view of the above, we strongly believe that coherent pragmatic decisions can derive from coherent theoretical premises. Therefore, with such intent, we wish to propose several theses, which, supported by adequate argumentations, could be useful in differentiating among discussion levels that, despite their differences, in the literature appear to be undifferentiated.

In fact, our belief is that the lack of separation between different "stratifications" of reasoning represents one of the main causes of confusion

[3] ALA Presidential Committee on IL. (1989). *Final Report on IL.* http://www.infolit.org/documents/89Report.htm.

[4] http://lorenzen.blogspot.com/.

about IL discourse and, consequently, that this obscures the way towards concrete and coordinated policy measures.

"Information Literacy" is a complex phenomenon, which can be analysed from several perspectives; here we have chosen to analyse it from the following points of view (see fig.1):

1. disciplinary, as a form of study of information (Culture of Information);
2. social/educational, as a form of literacy (Information Literacy);
3. cognitive, as a form of individual competency (information skills or i-skills).

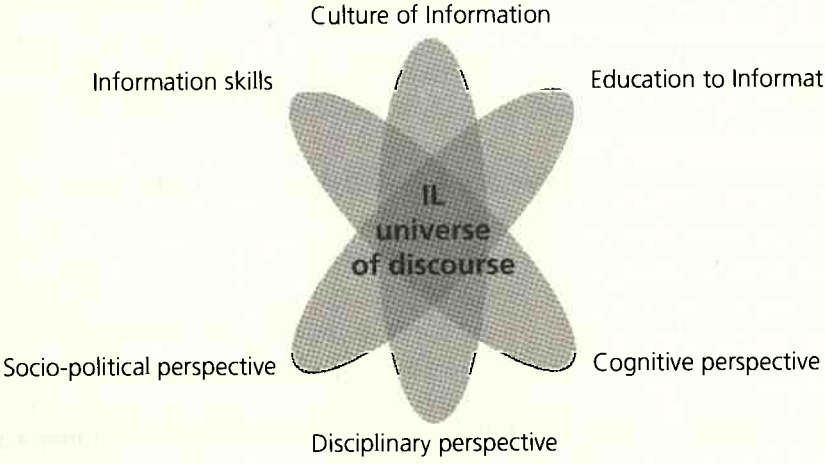

Fig. 1: Perspectives of analysis of the Information Literacy discourse

2. Definitions

The complexity of the IL concept goes beyond the literal meaning of the expression; nevertheless, going back to the literal meaning of the term "literacy" can be useful. As shown by the etymological and philological research on the English term "**literacy**"[5], this refers to a **state**, a **condition**, and in English there is no verb like the Italian "alfabetizzare", with a meaning similar to "making people literate"[6]. For the purposes of this paper it is fundamental to distinguish two meanings of the term literacy: the **status** (to be literate) and the **process** (to make someone literate).

[5] Carried out by Lisa Reggiani – Ceris-CNR Institute.

[6] In fact, the English verb "to alphabetise" means "to put in alphabetical order".

Definition. *Information Literacy (as process)*: educational **process**, of *political derivation*, that aims at spreading in a *population* a *minimum level* of competencies for the retrieval, evaluation and exploitation of information from a variety of sources.

Definition. *Information Literacy* (*as status)*: social objective of educational policy; **state** or **condition**, result of a process; to have acquired the competency to retrieve, evaluate and use information from a variety of sources.

The distinction between the process and its result is essential because the reasoning on the result revolves around variables like:

- expected competency level;
- aims of learning;
- assessment procedures;

while reasoning about the process is structured around other variables, like:

- planning of actions;
- target communities;
- curriculum design;
- course configuration;
- teaching agents.

The theses described in the following paragraphs are strictly connected to the definitions provided here: some of them represent a justification of the proposed definitions, particularly for terms in italics, while others are consequences of them. Other theses provide the rationale of our reasoning and thus are described in the next section.

3. Information Literacy as a discipline of study

THESIS 1: THE CULTURE OF INFORMATION FALLS WITHIN THE DISCIPLINARY FIELD OF DOCUMENTATION-INFORMATION SCIENCE[7]

Firstly, we want to place the knowledge transferred during the process of IL into a definite disciplinary field. This perspective of analysis regards IL as a **form of study of information**, as a branch of knowledge and therefore as a

[7] Hereafter the terms Documentation and Information Science will refer to the same discipline, since the former – in use until 1969 - is the older name of the latter.

subject of study, which we will call "Culture of Information". We refer to the seminal work by Fritz Machlup and Una Mansfield[8] for an in-depth study and a comparison among nine disciplinary fields, whose main or secondary study object is information:

> *"cognitive sciences, computer and information science, artificial intelligence, linguistics, library and information sciences, cybernetics, information theory, mathematical system theory and general system theory".*

In the same work the authors describe the debate about whether it is suitable for some disciplines to be defined as "science", an issue outside the scope of this paper.

Nevertheless, it is worth to underline the existence of **cultural differences in the study of information**, even within the limits of the LIS (Library and Information Sciences) field.

The common theoretical matrix of the various documentary disciplines - Archival Science, Library Science, Bibliography, Documentation or Information Science - is undeniable. However, those elements, which at a theoretical level represent a partial difference, in the purposes of the single disciplines constitute a relevant distinction.

By accepting such a significant common matrix, the Culture of Information inherits **methodologies and tools** from Bibliography, Library Science, Documentation, Scientific Research Methodologies and Computer Science[9].

However, three fundamental elements are additionally and specifically inherited from Documentation:

- the **ability to map** heterogeneous sources,
- a **critical sense and evaluation ability**,
- and – most important – the **typology of results**.

In fact, by limiting the comparison to that between Documentation and Library Science in other papers we have underlined that:

> *"In comparison with the result of the reference service, which points out and refers to information sources, the result of the documentation service is a synthetic processing of various sources; it is the answer and not just a medium to achieve it.*[10] *"*

[8] Machlup, F., & Mansfield, U. (1983). *The study of information. Interdisciplinary messages.* Wiley & Sons.

[9] The list is in random order, without any attribution of relevance as to the influence of the various disciplines on IL.

[10] Basili, C. (2000). L'assetto disciplinare della Documentazione. Alcune riflessioni. *AIDA Informazioni, 18*(3/4), 30-35.

As for the comparison between *Library Instruction* and *Information Literacy*, the first one is limited to sources and services provided by the library and it is aimed at library users, while the second one relates to every form of explicit, codified and recorded information, and it is addressed to everyone who needs information for study or practical purposes.

As a disciplinary field, IL can therefore be considered as a branch of Information Science, as the latter affects IL aims much more.

The **relation between Culture of Information and Information Science or Documentation** can be better described through an analogy with the relation between Computer Literacy and Computer Science; reasoning about this analogy is useful, on the one hand, to emphasise the distinction between the concepts of Information Literacy and Computer Literacy and, on the other hand, to better understand the disciplinary placement of IL.

The disciplinary matrix of Computer Literacy is Computer Science and that of IL is Information Science.

Therefore we could identify a derivation relation between matrices and branches as follows:

branch X : matrix X = branch Y : matrix Y

which in the analysed case appears as follows:

Information Literacy : Information Science = Computer Literacy : Computer Science

The first consequence of this relation is that in both couples the **matrix** is a discipline for the training of **professionals** in that subject (respectively documentalists and the so-called computer specialists), while the **branch** is a discipline for the training of **users**, respectively of information and of computers. This can be synthetically represented as:

Information Science : Information Professional = Computer Science : Computer Professional
Information Literacy : Information User = Computer Literacy : Computer User

A second consequence relates to the inheritance of basic characteristics from the matrix: the branch inherits the main characteristics of the matrix from which it derives. Were we to place the different concepts in a thesaurus, the relation between terms could be represented as follows:

Information Science	Computer Science
NT Information Literacy	NT Computer Literacy

And vice versa:

Information Literacy	Computer Literacy
BT Information Science	BT Computer Science

Therefore - we want to emphasise again - the Culture of Information is aimed at educating information users and it is different from the education of information professionals.

Thesis 2: The Culture of Information is a kind of knowledge independent from every application domain

The definition of "discipline" provided by Machlup and Mansfield, reported here in full:

> *"Disciplines (sciences, academic areas of research and teaching) are orderly arrangements (metaphorically called bodies) of coherent thoughts, formulated as propositions, about things (sense-objects or thought-objects) deemed worthy of being known (i.e., being believed with some degree of confidence) and being passed on."* (Machlup & Mansfield,1983, p. 3)

is clear and simple enough for the scope of our reasoning.

In addition, most scientific disciplines present both a **theoretical** and an **applied component**. This is affirmed by Borko in relation to Documentation, at the moment of the epochal transition from "Documentation" to "Information Science" in 1968[11].

> *"Information Science [...] is concerned with that body of knowledge relating to the origination, collection, organisation, storage, retrieval, interpretation, transmission, transformation, and utilisation of information. It has both a pure science component, which enquires into the subject without regard to its application, and an applied science component, which develops services and products."* (Borko, 1968[12])

Ancient Greeks already made a distinction between Ἐπιστήμη (epistéme) – science or scientific cognition - and Τέχνη (téchne) – art, skill or ability, instrumental, context and practical knowledge.

[11] This change in denomination was officially ratified in 1969, when the "American Documentation Institute" was given the new denomination of "American Society for Information Science".

[12] Borko, H. (1968). Information science: What is it? *Journal of the American Society for Information Science, 19*, 3-5.

Aristotle's position, in particular, is understood by modern science as the basis for the distinction between **theory** (possession of knowledge) and **practice** (the field of craft, profession)[13].

Because of its derivation from Documentation (see Thesis 1), the Culture of Information inherits the same components.

The **theoretical component** is based on a set of general principles, logical constructions and standardised methodologies, inherited from Information Science[14], which represent the theoretical basis for structuring, representing and organising information. Its objects of study, just to quote some of them, are: architecture of a system for information retrieval, structure of an apparatus for indexing, methodologies for the evaluation of sources, criteria for the analysis of sources, techniques for the production of *dossiers*. Besides these, we find general principles and context knowledge such as: concepts of bibliographical checks, processing of the documentary chain, information life cycle, ethical use of information. This theoretical foundation is completely **independent from its application context**, which makes it possible to place the Culture of Information among the other disciplines of study. The theoretical component, in other words, constitutes the property of transversality of the Culture of Information with respect to subject (or vertical) disciplines like Astrophysics, Geology, Medicine, and so on (see Thesis 3 below).

On the other hand, only the **applied component** of the Culture of Information can – but not necessarily must – be intended as functional for a specific domain or field of study. It comprises the study of services and information resources of interest for a specific subject field.

The applied component can be integrated into various vertical disciplines (compare to Thesis 3 below), through the indication of specific sources and the description of particular reference systems, also with the support of the library staff.

Another important distinction is that between the concepts of education and training. In previous papers we have already underlined the need for establishing a Culture of Information[15], i.e. to infuse *values* as to the

[13] Parry, R., "*Episteme* and *Techne*", *The Stanford Encyclopedia of Philosophy (Summer 2003 Edition)*. Edward N. Zalta (ed.).

[14] This set of general principles makes up the theoretical foundation of Information Science as a scientific discipline.

[15] Basili, C. (2001). "Information literacy": un concetto solo statunitense? (Information literacy: an issue only in the USA?). *AIDAinformazioni, 19*(2).

importance of information and its ethical use, while training is mainly concerned with instructions for using tools and information resources.

The specialised literature distinguishes among different kinds of knowledge:

- *Know-why*: is the knowledge of general principles and laws, which govern nature, human mind and society;
- *Know-what*: is the knowledge of facts (contiguous, regarding its meaning, to that which is commonly defined as "information");
- *Know-how*: refers to the skill and competency in doing something.

In view of such distinction and considering the large proliferation of courses and IL tutorials, most of which designed for auto-instruction, we want to stress that IL is mainly "knowledge", not mere "ability". This view is supported by Shapiro's and Hughes's concept, who include IL among the liberal arts:

> *"Information and computer literacy, in the conventional sense, are functionally valuable technical skills. But information literacy, should in fact be conceived more broadly as a new liberal art that extends from knowing how to use computers and access information to critical reflection on the nature of information itself, its technical infrastructure, and its social, cultural and even philosophical context and impact - as essential to the mental framework of the educated information-age citizen as the trivium of basic liberal arts (grammar, logic and rhetoric) was to the educated person in medieval society."* [16]

THESIS 3: THE CULTURE OF INFORMATION IS A KIND OF TRANSVERSAL KNOWLEDGE

In the specialised literature, the distinction often occurs between subject disciplines and cross-curricular disciplines, where the former – here called "vertical" – focus on a particular field of study and research, while the latter – which we call "horizontal" – have a methodological character independent from a specific scientific sector.

The Culture of Information, as Informatics and Second Language, is transversal to every intellectual activity, and thus it can be introduced in any course of study. In fact, it can be counted among the methodologies of scientific research and it has been defined as the basis for "learning how to learn".

[16] Shapiro, J.J., & Hughes, S.K. (1996). Information Literacy as a Liberal Art: Enlightenment proposals for a new curriculum. *Educom review, 31*(2), 31-35
http://www.educause.edu/pub/er/review/reviewArticles/31231.html.

Furthermore, the competencies acquired (information skills) are defined in the European Education Thesaurus as being included in Basic Education[17], as follows:

basic education
MT (10) content of education
da: grunduddannelse
de: Grundbildung
el: βασική εκπαίδευση
es: educación básica
fi: perusopetus
fr: éducation de base
it: educazione di base
nl: fundamenteel onderwijs
pt: Educação de base
sv: grundutbildning
SN instruction in subjects of elementary education, social skills and community responsibilities
UF fundamental education
NT1 computer literacy
NT1 **information skills**
RT basic training
RT content of education
RT minimum competencies

THESIS 4: THE CULTURE OF INFORMATION IS DISTINCT FROM INFORMATICS CULTURE

In 1983 F.W. Horton pointed out the distinction between Information Literacy and Computer Literacy – affirming that:

> *"Computer literacy has to do with increasing our understanding of what the machine can and cannot do. There are two major components of computer literacy: hardware and software.*
>
> *... Information literacy, then, as* opposed *to computer literacy, means rising the level of awareness of individuals and enterprises to the knowledge explosion, and how machine-aided handling systems can help identify, access and obtain data, documents and literature needed for problem-solving and decision-making."* (Horton, 1983)[18]

As a matter of fact, today all secondary information and an increasing portion of primary information is available in electronic format.

[17] http://www.eurydice.org/TeeForm/TEE_DOWN_EN.htm.

[18] Horton, F.W. Jr. (1983). Information literacy vs. computer literacy. *Bulletin of the American Society for Information Science, 9*(4).

Correspondently, a great variety of search software exists and therefore their functionality as computer applications has to be understood and studied. Nevertheless, this study should be concerned mainly with the general logic of the internal design of this class of packages and its strong relation with the underlying information architecture.

4. Information Literacy as social objective

THESIS 5: INFORMATION LITERACY IS A REQUISITE OF THE INFORMATION SOCIETY

The reasons supporting this thesis can be found in the introduction of nearly all the articles dealing with the issue of Information Literacy. Therefore, we will just quote the most recurring slogans related to well-known problems and needs of the current Information Society:

- information overload;
- information smog;
- learn how to learn;
- active citizenship;
- information divide.

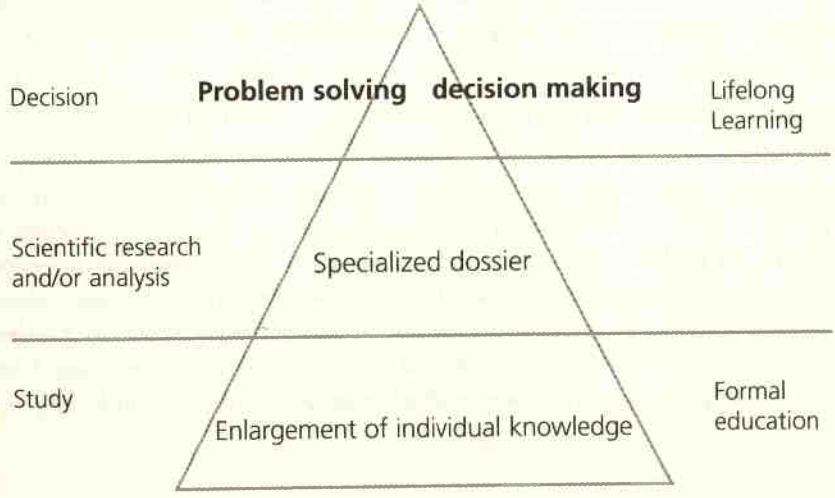

Fig. 2: Aims and contexts of Information Literacy exploitation

The only feature we want to underline is a kind of graduality in the different purposes of Information Literacy.

In the literature there seems to be a large consensus about the close relation between Information Literacy and processes like *problem-solving* and *decision-making*. However, these purposes can be conceived as one end of the spectrum, whereas the opposite end is the enlargement of individual knowledge.

Figure 2 tries to provide a graphical representation of this concept.

THESIS 6: INFORMATION LITERACY IS AN OBJECTIVE OF EDUCATIONAL POLICY

In section 2, information literacy was defined as an educational policy goal. In the following sections, we will provide a number of arguments supporting this thesis. Firstly, the original meaning of the term "literacy" – i.e. "to be able to read and write" – historically originates as a political objective aimed at solving the question of illiteracy.

Furthermore, Zurkowsky[19], to whom the coining of the expression *information literate* has been attributed, characterises it as a politically motivated intervention. This cannot be identified in the following sentence, heavily quoted in the literature:

> *"People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for using the wide range of information tools as well as primary sources in molding information solutions to their problems."* (Zurkowski, 1974)

but rather in the abstract of his paper found in the Eric database[20]:

> *"The relations of the National Program for Library and Information Services to information literacy and the information industry are discussed. Private sector information resources are identified in several categories. The traditional relations of libraries and with the information industry are described, and examples are given of situations where traditional roles of libraries and private sector information activities are in transition. It is suggested 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.* (PF)*"*

[19] Zurkowski, P. (1974). *The information service environment: Relationships and priorities.* Washington, DC: National Commission on Libraries and Information Science. Government Printing Office (Report ED 100391).

[20] ED100391: The Information Service Environment: Relationships and Priorities. Related Paper No. 5.

In fact, the abstract – as we can see – clearly mentions Zurkowsky's hope that a national program would be started, aimed at achieving universal information literacy within a decade.

Thesis 7: Information Literacy implies a massive operation

The definition of information literacy proposed in section 2 implies the concept of "target population" of the Information Literacy process.

From our understanding of this expression and according to the character of Zurkowsky's paper, the target population is all the citizens who find themselves in the condition of information illiteracy.

However, it is necessary to consider those cases in which the educational objective is pursued within a limited universe in comparison to that of a whole nation: a region, a province, a municipality, a university, a school. The case of the studying population of **universities** is particularly interesting for our analysis.

The IL process, anyway, implies the idea of a mass-operation, according to its policy connotation (see thesis 6). This aspect can be easily recognised also in the denomination of international initiatives, like the Unesco "Information *for all* Programme".

Thesis 8: Information Literacy refers to a minimum amount of competencies

The concept of literacy has been extended from its original meaning, i.e. "ability to read and write", to that of **competencies of general character**, dispensed to individuals who are completely or almost completely incompetent in that matter[21]. This is opposite - we wish to underline this concept - to the professional training of information specialists (see Thesis 1).

We can consider three levels of competency:

- Basic
- Advanced
- Specialised.

In fact, besides the literal meaning of the term "literacy" - which calls for an educational strategy having a "minimum common denominator" -, it could be useful to consider also both the advanced and the specialised level of competency, particularly in the Higher Education context.

Our view of the three levels of IL competency is outlined below.

[21] We mean, for example, the processes for the diffusion of Second language and Computer Literacy launched in primary schools in the last decades.

Basic IL competencies:
- Fundamental concepts: value of information, a general picture of the information universe
- Basic theoretical level: information mapping, Information Retrieval basics, *minimum* set of evaluation criteria

Advanced IL competencies:
- Basic IL competencies
- Analysis of information sources
- The logic of the Information Retrieval process
- Semantic representation of documents (basic concepts)
- Scientific writing

Specialised IL competencies:
- Advanced IL competencies
- Disciplinary information mapping
- Specific search tools
- Disciplinary writing

The set of theoretical concepts – in each competency level – is fundamental for learners in order to make them able to also deal with **future** information retrieval tools.

The distinction among different levels of IL competency is relevant for the discussion about two main points: the configuration of IL regarding the curriculum and the attribution of the charge of teaching (see section 6).

THESIS 9: INFORMATION LITERACY REQUIRES CHANGES IN THE EDUCATION SYSTEM

To date, the teaching dimension of IL has been developed mostly through autonomous initiatives by libraries worldwide, in the common format of tutorials and self-instruction courses (see PRIMO)[22].

Nevertheless, IL – as a requisite of the Information Society (see thesis 5) – cannot be developed in episodic and fragmented forms, but rather through coherent policy measures concerning modifications in the education system.

This topic represents a key issue for an effective implementation of the IL process, as it comprises a conversion of policy goals into operational terms.

[22] http://www.ala.org/ala/acrlbucket/is/iscommittees/webpages/emergingtech/site/index.cfm.

Implementing such transformations means identifying (and agreeing upon) one of the alternative paths for the modification of the education system.

Below is the general concept of Education Policy as defined in the TESE - Thesaurus for Education Systems in Europe – 2006 Edition[23]:

Education policy
MT (04)
SN:

UF educational policy

NT **access to education**
NT **accreditation**
NT **democratisation of education**
NT **duration of compulsory education**
NT **duration of studies**
NT duration of the academic year
NT duration of the school year
NT forecasting
NT free education
NT language policy
NT **planning**
NT **priority area**
NT promotion of mobility
NT **reform**
NT school closure
NT setting up a school

RT education
RT educational authority

It can be of help in outlining the issue. The terms which are (to different extents) of interest for an IL policy are in bold.

Our view of the problem – which is strictly connected to the scope of the European network on Information Literacy[24] we launched in 2001 - is more oriented towards a policy inspired by the Bologna process for Higher Education in Europe.

The Bologna process, aimed at establishing a European Higher Education Area, operates along a number of action lines. In the reasoning

[23] http://www.eurydice.org/portal/page/portal/Eurydice/TESEHome. It is meaningful to note that in April 2008 the descriptor "Information Literacy" is absent from the Tese thesaurus, while it has been present in the Eric Thesaurus since 1992.

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

about the institutionalisation of IL within the Higher Education context, of particular interest are the "Bologna" activities of curriculum designing and harmonisation, together with the introduction of the concept of learning outcomes.

The first series of activities are now being carried out through the "Tuning Educational Structures in Europe" project[25], which is aimed at:

- "Tuning" educational structures in Europe, and thereby aiding the development of the European Higher Education Area.
- Opening a debate on the nature and importance of subject-specific and general competences, involving all stakeholders, including academics, graduates and employers;
- Identifying and exchanging information on common subject-based reference points, curricula content, learning outcomes and methods of teaching, learning and assessment;
- Improving European co-operation and collaboration in the development of the quality, effectiveness and transparency of European higher education by examining ECTS credits and other suitable devices to enhance progress.

Among the Tuning project activities, it is useful to mention the analysis – for each course of study and disciplinary sector – of the differences existing among university curricula in Europe, in order to make curricula of the same subject area more comparable (and therefore transferable).

The concept of learning outcomes is strictly related to the quality assessment procedures of universities, which are asked to demonstrate the efficient achievement of these, particularly in response to calls for accountability[26]. This concept is quite new in Europe, while elsewhere, for example in Australia and the USA, it is among the well-established criteria in order for universities to obtain government funds. In fact, in Australia and the USA, the learning outcomes are explicitly declared in the mission of each university and constitute the set of competencies that graduates are expected to acquire. They must be measurable in order to give evidence of the successful completion of a study cycle. It is worth noting that in most Australian universities IL is included among the learning outcomes (or graduate attributes, as they are also known in the USA)[27].

[25] http://tuning.unideusto.org/tuningeu/.

[26] Barrie, S.C. Rethinking Generic Graduate Attributes. *HERDSA News*, Draft, 5th March 2005.

[27] www.caul.edu.au/surveys/info-literacy2004.doc.

5. Information Literacy as cognitive acquisition by individuals

THESIS 10: INFORMATION COMPETENCIES (OR I-SKILLS) MUST BE CERTIFICATED
Acquired information competencies constitute the learner dimension of Information Literacy. The cognitive perspective is the most analysed in the literature and a number of standards has been developed for different classes of learners. Of particular interest for the scope of this paper are the ACRL Competency Standards for Higher Education[28].

It is meaningful to distinguish between two main classes of learners:

- those still in the cycles of formal education (pupils in primary education, students in secondary and higher or tertiary education);
- those already outside the formal education system, i.e. in the lifelong learning context.

Information competencies achieved within the formal Education fall within the standard evaluation procedures, like any other competence dispensed there. In previous sections the connotation of the Culture of Information as an autonomous discipline has been already discussed (compare theses 1-3).

Outside of the formal education cycles, and therefore in the lifelong learning context, it is necessary to define and develop methodologies for standard certification. To this end, it could be useful to set up an Information Driving License – perhaps at a European level (EiDL[29]), analogous to the European Computer Driving License (EcDL). The EiDL could be calibrated on a minimum level of competency (the basic level – see thesis 8), in order to be suitable for both a massive operation (see thesis 7) and generalised needs, independent from a specific application field (see thesis 2).

6. The resulting picture: consequences of the proposed theses

The theses illustrated in the previous sections can be, in turn, assumed as statements to be taken into account in outlining how IL could be institutionalised in European universities.

[28] http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.cfm.
[29] Basili, C. (Ed.). (2003). *Information Literacy in Europe. A first insight into the state of the art of Information Literacy in the European Union.* Roma: Consiglio Nazionale delle Ricerche, p. 9.

A first step should be that of promoting among academics and policy makers the awareness of both the need for IL (see thesis 5) and the distinction between IL and Computer Literacy (thesis 4). Alongside, the idea of replicating – *mutatis mutandis* – an institutional configuration path similar to that of Computer Literacy can be suggested. Both disciplines, in fact, are transversal and useful to every course of study (see thesis 3).

A second step could be to include IL among the learning outcomes of European universities and, particularly, among the so-called "generic instrumental competencies" (theses 11 and 3). A viable solution could be to integrate the ACRL Competency Standards for Higher Education into the Tuning project[30] activities[31].

A strong assumption underlying the previous steps is to recognise the Culture of Information as a discipline in its own right (thesis 1), to be conceived mainly as "knowledge" then as mere "ability" (thesis 2), independent from any subject discipline (thesis 2), except for its applicative component (thesis 1), which can be related to the specialised IL competency level (thesis 10).

The second edition of the Anzil framework[32] includes the following table, adapted from the work by Bruce[33], illustrating IL program components:

Generic	Extra curricular classes and/or self paced packages
Parallel	Extra curricular classes and/or self paced packages that complement the curriculum
Integrated	Classes and packages that are part of the curriculum
Embedded	Curriculum design where students have ongoing interaction and reflection with information

Table 1: Information literacy program components

[30] http://tuning.unideusto.org/tuningeu/.

[31] It is important to underline that the Tuning project is a university-led project. It presents the motivated and generous work of 128 academics from 105 University departments across the length and breadth of Europe (http://tuning.unideusto.org/tuningeu/: final report of Tuning phase 1).

[32] Bundy, A. (Ed.). (2004). *Australian and New Zealand Information Literacy Framework. Principles, standards and practice* (2nd edition). Adelaide: Australian and New Zealand Institute for Information Literacy.

[33] Bruce, C. (2002). *Information literacy as a catalyst for educational change: a background paper.* White paper prepared for the UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy to be used at the Meeting of Information Literacy Experts, Prague, Czech Republic, 2002 http://www.nclis.gov/libinter/infolitconf&meet/papers/bruce-fullpaper.pdf

We would like to use this classification to reason about a range of **disciplinary configurations** of the discipline "Culture of Information" with respect to the academic curriculum. This implies a reformulation of the Table 1 as follows:

Generic	Extra curricular, not credit-bearing
Parallel	Extra curricular discipline, credit-bearing, optional
Integrated	A discipline inserted into the curriculum, credit-bearing, mandatory
Embedded	Part of subject disciplines

Table 2: Disciplinary configurations of IL in a course of study

According to Table 2, the responsibility of teaching could be attributed to librarians for the basic level competencies (what in the table is "generic") and to academic staff from the LIS Faculties for the other configurations. The embedded configuration - corresponding, in our view, to what we defined as "specialised competency level" - should be provided by academics of the "host" subject discipline.

7. Concluding remarks

Adoption of a comprehensive policy on Information Literacy is crucial for its institutionalisation within the Higher Education context.

Far from claiming to be exhaustive, the paper attempts to stimulate a debate around specific points of the Information Literacy discourse, by splitting it into a number of components and by grouping those components according to three perspectives of analysis of Information Literacy: as a discipline of study, as an education policy goal, as a competency.

According to the research perspective of the European network on Information Literacy (EnIL), the discussion has been mainly focused on the Higher Education context, even if some of the concepts expressed are of general interest.

Some of the consequences derived from the proposed framework of analysis are in contrast with the positions dominating the specialised literature. It is hoped that this very contrast could be of some help in the debate around Information Literacy in Europe.

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CONTRIBUTIONS

DEVELOPMENT OF INFORMATION-RELATED COMPETENCIES IN EUROPEAN ODL INSTITUTIONS

*Sirje Virkus**

1. Introduction

The centrality of information and knowledge for personal fulfilment and economic success has brought with it a growing interest in information-related competencies (IRC) and in ways in which these are developed and fostered in the context of the knowledge society. The competencies for generating, managing, and using information effectively are essential for effective functioning in the knowledge society, and to cope with continuous changes.

The aim of this paper is to give an overview and report some of the selected findings of a research project on the development of IRC within open and distance learning (ODL) universities in Europe. The paper is divided into four parts. The first provides a working definition of the concept of IRC. The second describes the methodology of the study. The third presents the selected findings of the survey and the fourth reports findings of the case studies. Because of the space limits of this publication only selected findings are presented in this paper.

2. Definition of Information-Related Competencies

Librarians and information professionals name the competencies needed to access, evaluate, manage, and use information effectively as 'information literacy'. In the last decade information literacy (IL) has been a topic of increasing interest in the higher education sector partly because of information overload, especially related to the growth of digital information, and partly because of the new focus on learning in a lifelong learning context. It is believed that constructivist thinking and pedagogy and alternative modes of educational delivery are creating new demands for IL and the need to move away from the dominant paradigm of pre-packaging information for students to facilitating learning in an authentic and information-rich context (Virkus, 2003).

* Tallinn University, Tallinn - Estonia

The author, focussing in her research on the higher education sector in Europe, prefers to use the term 'information-related competencies' rather than 'information literacy' in her study. The reasons for using the former term is the conviction that the concept of 'information literacy' is very elusive, its essence is hard to grasp, and the meaning is not always clear in European higher education environment. It was believed that the concept of competencies is more familiar and better understood among academic staff, students and senior managers in European higher education settings. In addition, the concept 'information-related competencies' allows for the differentiation of several blocks of competencies related to information handling and use; for example, identifying, locating, gathering, selecting, storing, recording, retrieving and processing information from a variety of sources and media; developing successful information seeking and retrieval strategies; mastering complex and multiple information systems; organizing, analysing, interpreting, evaluating, synthesizing, and using information; and, presenting and communicating information clearly, logically, concisely and accurately. Thus, it might be easier to perceive how to integrate or embed different competencies or blocks of competencies into the learning process at a different educational level and thereby facilitating the development of these competencies (Virkus, 2003, 2006). Information-related competencies in this study are defined as the skills, knowledge, attitudes, experience, attributes, and behaviour that an individual needs to find, evaluate and use information effectively (Virkus, 2006).

3. Methodology

This study forms a part of a doctoral research project that aimed to investigate the ways in which IRC are being developed within European higher ODL institutions. The general research strategy in this study was a mixed method research strategy, using both qualitative and quantitative methodologies, built into a two-stage research design. A survey provided a broad picture of a phenomenon, and case studies covered a more limited area of the same ground but in more depth. The first stage was a small-scale questionnaire survey carried out in 2003. The objectives of the questionnaire were to determine the extent and the ways to which IRC were developed within European higher ODL institutions and to investigate the role of libraries within the development of IRC. The results of the survey helped to identify institutions displaying good practice, issues and actors for the next stage of the study (Virkus, 2006, 2007).

The second stage of the study involved a qualitative research, a multiple case study in six European ODL institutions, where in-depth, semi-structured, tape-recorded interviews with 72 people were conducted. Site visits, documentary analysis and in-depth interviews were conducted during the period August 2003 - October 2004 in the six universities. In each institution, which had been identified as an example of good practice, representatives from four groups of actors, namely 4-5 distance learning students, 3-5 faculty members, 2-5 librarians and 1-2 senior managers, were interviewed. All interviews were conducted in English, except one interview when the researcher had to switch to the local language, of which she had sufficient knowledge to conduct the interview (Virkus, 2006, 2007).

4. Survey Findings

This study focused on the member institutions of the European Association of Distance Teaching Universities (EADTU). The reasons for focusing on the EADTU member institutions were the following: EADTU, established in 1988, has a long-standing reputation in the field of ODL and it is the important voice of the HE community for ODL in Europe and its member institutions. EADTU member institutions represent the most active and innovative actors in the field of ODL in Europe. It was believed that those institutions innovative in ODL are probably contributing actively towards IRC building as well and that there are cases of 'good practice' within EADTU member institutions from which the researcher would be able to learn most. Thus, all institutions offering ODL in Europe were the population and all member institutions of EADTU were the sample in the survey at the first stage of this study (Virkus, 2007).

A self-administered questionnaire was designed on the basis of research questions and the literature review. The questionnaire consisted of six sections: policy, curriculum, research, higher degree supervision, academic development partnership and data about the institution. The questionnaire consisted of 24 main questions on four pages. However, several questions included sub-questions. Thus, the total number of questions was 46. To establish instrument validity and reliability, the questionnaire was used in an initial pilot of sixteen persons.

The objectives of the questionnaire were:

- To determine the extent and the ways to which IRC are developed within European higher ODL institutions.

- To investigate the role of libraries within the development of IRC.
- To identify examples of 'good practice' in the field of IRC development in European higher ODL institutions.

An email questionnaire was distributed to all EADTU member institutions in Europe in March 2003 (156 conventional universities and 7 open universities). In total, 71 respondents from 16 countries submitted responses to the questionnaire: Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. This gave the survey a total response rate of 43.6 % which was felt to be satisfactory.

4.1 Institutional Policy

38 (54%) of the survey respondents declared that they have policy documents in their institutions that emphasize the need to focus on IRC in curricula or in student learning. 23 (32%) of the survey respondents indicated neither any form of institution-wide IRC strategy nor any initiative under development. 9 (13%) of respondents were not aware if there were such kinds of policy documents and one respondent did not answer that question. It was noted that policy documents included such items as IL plans and lists of graduate attributes or 'qualities of graduates' and strategic plans in teaching and learning emphasising the integration of problem-based learning and resource-based learning into the curriculum (Virkus, 2007). 28 (39%) of the respondents answered that library staff belong to the educational committees that make decisions about curricula and learning. 35 (49%) respondents indicated that existing procedures for review of curriculum design in their institution require the incorporation of ideas about IL development into the curriculum (Virkus, 2007).

4.2 Integration of IRC into Curriculum

50 (70%) respondents referred to collaboration between librarians and the faculties to integrate IL into the curriculum and 32 (45%) respondents indicated that librarians were working closely with faculty on planning learning. In one institution librarians were always involved in developing courses. They always provided online tutorial support, assessment and evaluation in 3 institutions and in 15 institutions they always assisted students in the preparation of their literature reviews. In 10 institutions they

always assisted students in the preparation of their assessed work and in 2 institutions librarians were always involved in product development, such as Web sites for courses and subjects. In 5 institutions they were always involved in the development of self-paced IL modules and in 8 institutions they always developed Web materials for students and staff (Virkus, 2007).

	Always	Sometimes
Developing courses	1	68
Providing online tutorial support, assessment & evaluation	4	56
Assisting students in the preparation of their literature reviews	21	66
Assisting students in the preparation of their assessed work	14	68
Developing Web sites for courses/subjects	3	59
Self-paced 'IL' modules	7	51
Web-based learning materials that may be used by staff and students	11	63

Table 1: Librarians' involvement in learning (%)

The instruction or advice given to students on finding information to support their course work mainly included a brief tour of the library (38 institutions), handout and/or map (33), verbal instructions from tutors or staff (32), section in a student handbook (25), lecture or seminar especially devoted to these topics (17), course or series of lectures devoted to these topics (6), phased programme of detailed induction by staff (5) and several lectures/seminars on using the facilities (4) (Virkus, 2007).

	Always
A brief tour of the library	54
A handout &/or map	47
Verbal instructions from tutors or staff	45
A section in a student handbook	35
A lecture/seminar devoted to these topics	24
A course or series of lectures devoted to these topics	9
A phased programme of detailed induction by staff	7
Several lectures/seminars on using the facilities	6

Table 2: Integration of IRC into the curriculum (%)

In 14 institutions (20%) students earned credits for a unit or component on IL during their studies on a cross-disciplinary basis and in 34 (48%) institutions as part of a discipline specific course. 18 (25%) institutions indicated that there were also other programmes that foster IL or a range of generic attributes including IL (Virkus, 2007).

4.3 Research

32 (45%) institutions were involved in information literacy research. However, in 21 (30%) institutions the faculty and in 17 (24%) institutions librarians were involved in IL research. Librarians and faculty partnership in the area of IL research was mentioned in 4 (6%) institutions, but 34 (48%) institutions indicated that such kinds of partnership can be sometimes found (Virkus, 2007).

4.4 Higher Degree Supervision

Librarians and faculty shared expertise and responsibility for helping students through the phases of higher degree research in 27 (38%) institutions. Librarians acted as co-supervisors ensuring that literature reviews were relevant in 15 (21%) institutions, kept supervisors and students up to date with information resources and services in 47 (66%) institutions and participated in the preparation of literature reviews and research proposals in 19 (27%) institutions (Virkus, 2007).

4.5 Academic Development Partnership

In 36 (51%) institutions workshops and other activities were arranged to introduce faculty to the idea of IL education. 44 (62%) institutions also indicated that there had been several workshops or other activities aiming to introduce faculty to the idea of IL education during the previous 12 months (Virkus, 2007).

5. Findings of the Case Studies

The case study interviews aimed at gaining an understanding of respondents' views, attitudes, beliefs and behaviour related to the development of IRC. The

interviews covered the same thematic areas as the survey: policy, integration of IRC into the curriculum, the role of the library in supervision, staff development and research. This section focuses only some of these themes, namely the respondents' views on how national and institutional policy is supporting IRC development, the integration of IRC into the curriculum, the assessment of IRC, the existence of IRC among students and staff, the concept of IL, and the role of the library in IRC development. It also highlights the importance of leadership that emerged from the interviews.

5.1 National and Institutional Policy Supporting IRC development

National and institutional policy for the development of IRC in education is influenced by the social, economic and cultural context of the country and the development and traditions of its education systems. However, over the last decade many countries and institutions have developed policies and strategies that support the development of IRC.

The respondents noted that the national policy supported IRC building via different initiatives – even though the notion of 'information literacy' or 'information-related competencies' were not explicitly mentioned (Virkus, 2004). For example, IRC were highlighted in the context of information society developments and the Bologna process, electronic or digital library projects, e-learning or key skills initiatives and the lifelong learning agenda. For example, senior managers note:

> *[...] the most active discussions have now taken place as a part of the Bologna process, if we are developing a new university structure and new curriculum, the important part of the new curriculum in different fields will be so called general skills, and now when we have started to talk about it, about these general skills, then of course information literacy has been one of the promising candidates that should be included into those general skills that should be taught in all disciplines in all degree programmes.*

> *Information literacy has been a very hot topic in [...] discussions at all levels of education and somehow it is also included into the new curriculum of our primary school and high school...*

> *[...] we have a huge initiative ... called, Electronic Research Library, it's a huge initiative and under this have been a lot of projects [...] to develop information competence...*

At institutional level, some respondents referred to the strategy documents which also emphasised the need for the development of IRC,

even the word 'information literacy' or IRC were not always explicitly mentioned. However, in several institutions, the strategy documents did not include those concepts or those documents were developed mainly by the library. Senior managers note:

> *[...] we have a specific strategy, so called virtual university strategy, where we have much more detailed recommendations and these should be guidelines in developing curriculum and evaluating if the learning outcomes are adequate in terms of information literacy skills which should be joint aims of all university students.*

> *In our main strategy we have basic recommendations about the importance of new information and communications technology, as a part of the academic expertise and the importance of this technology in organizing teaching and learning and there is also emphasised the importance of information literacy skills.*

5.2 Integration of Information-related Competencies into Curriculum

It was quite obvious that the integration of IRC into learning was in the beginning stage in all institutions of good practice in the period 2003-2004. A senior manager notes:

> *I think, it would be too much to claim that it is fully integrated into learning. I think, it is patchy across the different courses and different programs of study... I think it's early days really.*

A member of the academic staff noted: 'It is very early days, so it is difficult to say either these models [IRC development] are successful or not...'

A librarian mentioned:

> *I think it is a very small part of the curriculum. And we can tell you actually, because we have a database where we record the extent the courses are integrating information literacy... But I would say that it is a very small number. Probably less than dozen courses...*

A student expressed her opinion: '... the need to find information independently has increased recently in several courses...'

The main reasons why the IRC development was in the beginning stage and not always integrated into learning included:

- a lack of awareness among teachers to either understand or know how to integrate IRC into learning,
- a lack of good and convincing examples of IRC development,
- a lack of human resources and time,

- high workload of faculty and librarians,
- few enthusiastic leaders and
- a lack of a positive attitude toward IRC integration.

A senior manager notes:

Time. Lack of time, so many things to do, that's probably why. It's not lack of will, it's lack of resources.

Some universities mentioned the modular nature of the programmes as a barrier to integrating IRC. A manager notes:

I think the other problem in [our] university is the modular nature of the programs which means that each course is very free standing and, in order to make sense of information literacy skills development for students, you really need to consider the whole programme, the series of courses. And there is no very good mechanism for doing that. Each course team makes their own decisions...

Another reason was also that universities have been used to providing students with all resources they need and there was not always a need to find information independently. A senior manager notes: 'In our university we have tried to provide the students with all the resources they need...'

Difficulties in terms of economy of students' and tutors' time and effort were also mentioned as a reason for not supporting the independent information seeking behaviour. A senior manager notes:

It [information literacy] puts a load on the student and their time, it also puts quite a load on tutors who are working with them, because the tutors then have to, if you like, a lot of sources of information they are not aware of In that, a sort of contained course, the tutors are pretty well clear about the materials the students will have been using. We have to go a certain way in that direction, but I don't think we can make the all courses with that kind of open source approach.

5.3 Assessment of Information-related Competencies

Students' IRC were, according to those interviewed, mainly assessed via essays, project work and theses. Nobody indicated a good mechanism which would show if the student is information literate or has attained IRC.

A senior manager notes:

We have so many other dimensions on which we have to assess students, if you like, that I can't image that... information literacy is ever going to be the leading edge of a course assessment.

Other manager notes:

[...] it is a part of the evaluation of their seminar work, their master thesis process, but not so well defined as a separate specific aspect that should be evaluated. This is a field we have to develop many more tools we have so far.

An academic staff member says: 'No, I do not think we have a good model how to assess if a student is information literate'.

A student indicates:

Well, to be honest, it was slightly disappointing. I mean they gave you some tick boxes, we worked with tick boxes... and they rated you, I think out of three... achieved, well achieved... or something like that...

5.4 Lack of Information-related Competencies

However, it was highlighted that many students do not possess IRC and are not able to use and apply those skills when required. A senior manager said:

In general that we have seen in their essays, when they write essays, that it's clear that the ability to make use of information services is not very well developed, it is not so good developed than we would expect.

University managers also indicated the lack of IRC by the university staff.

We frequently face situations when researchers, who should be very skilful in using information tools, can't fully make use of those opportunities that are available. We still should find better methods to support our staff members so that they will make use of new opportunities for finding literature and using it and handling it.

I can't say that we would have a situation which is sufficiently good or we can be satisfied with the information literacy skills of our students or our staff members.

A librarian confirmed that statement:

We found out that a lot of teachers themselves don't have information competencies, they need this kind of information literacy themselves, they don't care about it so much...

5.5 The Concept of 'Information Literacy'

However, the nature of the concept of IL was accepted and appreciated among students, academics, senior managers and librarians, but the term itself created confusion and was not sufficiently understandable. For example, senior managers note:

It's [IL] too broad and at the same time it's not telling you very much when it wants to incorporate everything from getting... or having an information problem to solving it and presenting the results to the outside world.

I think that information literacy is a good concept because it shows what is important. But the words information literacy don't say what information literacy is and... information literacy has been different things... and information literacy now is another thing as it was just 20 years ago...

An academic staff member indicates:

Probably they don't talk and probably even don't think about it as information literacy. But they do see a range of skills - what we probably recognise as information literacy skills, important to learning... either the name is widely known or widely understood is the different matter...

A faculty member says:

The first time I heard of it was four years ago, when two consultants from the library held a presentation. I remember I thought - hmmm, they do have a word for those things...

Other staff members notes:

It's not a word I hear people are using very much. I feel, generally, people if they hear, they know roughly what it means, but it is not a part of, in describing courses or curriculum. It is not a sort of thing they talk about with each other.

Neither was the term very familiar among students. A student notes:

... it is not an expression I would use in everyday language. When telling people about my course [recently taken IL course] I would just say it was learning to use the internet properly and search for information about a particular subject.

Also librarians expressed hesitations:

Well, I have also some hesitations about the term. It seems that there is no common agreement even in library literature...

5.6 Role of the Library in IRC Development

Several respondents highlighted dramatic changes in libraries during the last decade and the increasing role of a university library. The discussion about changes in libraries focused most frequently on information and communication technology developments and the implications of information in digital formats.

Senior managers note:

There has been some kind of revolution during some last years in university libraries. The meaning of the traditional library has decreased. The services that are available to all the researchers have become so much more important.

They have changed a lot during the last five years or ten years, I don't know how many. During the last period that has changed a lot...

[...] as the Internet took off and electronic library services then, I think that it allowed all the ideas about information literacy to flourish.

The role of the librarian, staff development initiatives and good contacts with librarians in their own institutions were highlighted.

Senior managers note:

I think they [librarians] have been largely effective in making us think and telling us about some of the ways on which students ought to be behaving in a kind of knowledge society.

And the library is very good at putting on whole series of staff development events... The liaison librarian or subject librarian working with that faculty will organize things and push colleagues to take part in it. Other events are much more focused on, if you like, topical areas and themes. And to my knowledge, I have been at least three events, quite well attended, which were getting over, if you like, the benefits of working with digital resources and online access to information and the associated skills what would be needed. So, I think there have been a plenty of staff development events.

However, the general attitude towards librarians was not so positive and the need for a more proactive librarian was highlighted. Senior managers note:

... you have to get very high quality information services from the librarians... [...] it's a big cultural change [...] you have a big staff and the average age of a librarian [...] at university libraries, I think, is high, 50 or something like that, so it is not easy to pretend the change in the culture...

I think that... [...] librarians' working methods do not match the modern society. So, you have to make librarians work regarding to the information society, it's a new way of working.

University managers and academic staff also expressed a concern that there is a lack of pedagogical skills amongst librarians in general, and in the context of ODL in particularly. The online learning environment requires new competencies and attitudes amongst librarians about the design and development of learning materials and how to support learners online.

Senior managers note:

But that must also be the... not the old-fashioned librarian, you know, but a librarian, of course, who know what learning is and is interested in learning processes and not just learning results.

I think, there is also lack of pedagogical skills among librarians... I do not expect librarians to have those skills as well, to know also about the course content and concepts and so on, at that level, it's probably too much, it needs probably much higher number of librarians...

For example, in online courses with an IRC component the majority of students needed more interaction, a more research-based approach, personalized tasks and feedback from librarians. For example:

I was rather disappointed with that [discussion forum] also because it was supposed to be students..., you know, exchanging ideas and things about the course and trying, I suppose, simulate what would you get if you work doing things face to face and it didn't really...

... the course seems to me not to have understood why somebody would want to be doing research, the model that they had of learning was 'the knowledge is out there, all you have to do is to go and hunt for it'. This is a librarian's view of the world, it's not the researcher's view of the world...

I didn't like the assignment, it wasn't what I wanted to do... I was not interested in research on it and we had to research it and we had to look up and I thought it was too descriptive, you know, and I only did it, because, I just felt I wanted to complete it...

... there is no need at all, it seems to me, for you to determine what it is that should to be investigated as a main project, because if you really do have the expertise that you claim by virtually publishing this course you would be able to check very quickly whether or not there is any particular search, any particular project that was satisfactorily done, it would only take you 10 minutes to do it. So, why not allow your students to investigate the matter of their interest and curiosity...

It should be said that distance students didn't visit the library very frequently. Several students noted that they contacted library staff only when there were serious difficulties in finding basic data, problems in accessing online resources or in cases of technical difficulties. The physical library environment was not always very encouraging (Virkus, 2006). For example:

I have only contacted library staff when there were serious difficulties for finding basic data, when I had quite nothing to start with, only a few unknown references or problems to access online resources...

... because when you go to the university library, there is obviously a desk, on which you take the books and you return loans also, and I think, those people there..., there are always long lines of people with their books and in a hurry and people who could have time to help us in research, I don't actually know where they are...

I know one [librarian] particular, when I had loans from university libraries in Sweden, and when I had to renew them, then I knew that OK I go to that holeway and then there is the door, and I know the person who will renew my loans is sitting there, but I wouldn't contact her and ask for help in searching information from the Swedish library databases... No, they are not very visible, at least here, so I wouldn't just go to the holeway and knock on the door and ask, hey, can you help me...

5.7 Leadership

IRC development also requires good leaders who want to make a difference, can build efficient teams and integrate the interests of different target groups. The importance of leadership in the development of IRC emerged from the interview data and was not asked directly from the respondents. It was highlighted that the leadership influences:

- the initiation of 'information literacy' programs;
- the establishment of a good collaboration/partnership;
- the development of policy for IRC;
- the image of the library and librarian;
- the library culture;
- the staff development, and
- research.

For example, the librarians stated:

When I first started here, I got a task, and our director of public services at that time came to me and said that I should try to develop something new that could change the perception that was quite common among librarians and also among subject specialists and management of the library.

It is connected with persons, unfortunately. Our administration at the moment at the library is very conservative and wants to have as much results as possible with as little money and resources as possible. It has made it [development of IRC] very stressful and difficult.

If there are strong personalities who are enthusiastic in using new opportunities and technologies and they are also skilful in organizing good examples and convincing

their colleagues about these kinds of new methods, then it can be a very fast and dramatic development.

Part of that is structural, because [X], our library director, her boss is the pro vice chancellor of learning and teaching and it means she is very close to him. She has a lot of influence on him. And in fact, two weeks ago, he came and spent a half-day with library senior management team. Doing the visioning exercise. That was very useful to find out what his vision is and what our vision is. And he seems to be very committed to information literacy.

They got a new head librarian, not this one, she was a woman before this one, and she was very very very good. She created together with some people this new policy of openness and interaction with the study programmes and et cetera. So, I think, that really changed the attitude of the library, but also the conception of the library for the faculty.

Not in the way that the leader can do everything, but the leader can help create and support the culture, the different culture, depending on what leadership style to use and our leader style was very consultative, emphatic, you know, she had studied Chinese and she was very culturally aware of other people, different cultures, you know, ... if you are aware of differences you can handle it, if you can't see any differences, well, you get a problem.

6. Conclusions

To map the extent of integration of IRC into the European ODL a survey was designed and delivered as an email questionnaire to 163 EADTU member institutions in March 2003. 71 respondents from 16 European countries submitted responses to the questionnaire, a total response rate of 43,6 %. The respondents all reported some form of strategy for IRC or were in the process of developing one. They referred to IRC initiatives at institutional policy level as well as at curriculum level and faculty-librarian partnerships were indicated in the field of teaching, supervision, research and academic development. Librarians were to a certain extent involved in developing courses, providing online tutorial support, assessment and evaluation, assisting students in the preparation of their literature reviews and assessed work. Some of them were also involved in developing Web sites for courses and subjects, self-paced IL modules and Web-based learning materials for staff and students. However, the number of institutions where librarians were always involved in these activities was much smaller than the number of institutions where they were sometimes involved. A brief tour of

the library, a handout and/or map, verbal instructions from tutors or staff and a section in a student handbook were the most frequently mentioned ways of instruction or advice given students on finding information to support their studies. However, a lecture or seminar especially devoted to these topics, several lectures/seminars on using the facilities, a phased programme of detailed induction by staff, and a course or series of lectures devoted to these topics, were mentioned as well.

Many institutions referred to IL partnerships between faculty and librarians supporting research and supervision. Several workshops and other activities were also arranged to introduce faculty to the idea of IL.

72 interviews were conducted in the period August 2003 – October 2004. Case study interviews indicated that the importance of IRC is acknowledged in European ODL institutions, but the term IL is not always clear and widely used. IRC development was at the early stages in all institution where good practice had been identified in the period of the study. It was believed that students and staff do not possess adequate IRC. Academic staff delivered some of these IRC in their courses in collaboration with librarians, but there wasn't a solid enough framework for thinking about how students develop these competencies, how these are recorded, and of how students are made more aware of their IRC development and given a range of opportunities to develop those competencies. The main obstacles were a lack of awareness among teachers, lack of good and convincing examples of IRC development, lack of human resources and time, high workload of faculty and librarians, the modular nature of the programmes, the habits of providing the students with all the resources they need and difficulties in terms of economy of students' and tutors' time and efforts. The role of the university library and good contacts with librarians within their own institutions were highlighted, but the general attitude towards librarians was not so positive. The importance of leadership in the development of IRC emerged from the interview data. However, IRC initiatives in European ODL are quite fragmented and further exploration is needed.

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INFORMATION LITERACY PROGRAMMES IN HIGHER EDUCATION IN THE CZECH REPUBLIC: THE PATH OF THEORY AND PRACTICE

*Hana Landová**
*Ludmila Tichá***
*Michaela Dombrovská****
*Petra Šedinová*****

Abstract

This paper focuses on the information literacy projects carried out at universities in the Czech Republic. Policies, research activities and initiatives related to the issue of information literacy in the area of higher education in the Czech Republic are introduced in this chapter. The crucial points of the National Educational Policy and the National Information Policy are presented in the context of the realities of higher education. The role of academic librarians as key actors in information literacy education design (across the country and the curriculum) is emphasized and examples of integrating and embedding the information literacy components into the curriculum are described. The activities of Association of Libraries of Czech Universities and its Committee on Information Education and Information Literacy are presented including the experience of using a systems approach to formulating the information literacy definition and the Standards of Information Literacy in Higher Education. In addition, a survey carried out among college students in 2004 and 2005 focusing on their information literacy is described in detail including the hypotheses, methodology and results. The IVIG seminar, an annual event established in 2003, is introduced as a communication platform for academic librarians, as well as for politicians and faculty. The cooperation of the Committee at the international level is also mentioned and other possible ways to extend national and international partnership

* Czech University of Life Sciences Prague. Study and Information Centre & Charles University in Prague. Faculty of Arts. Institute of Information Science and Librarianship, Prague - Czech Republic
** Czech Technical University in Prague. Faculty of Mechanical Engineering. Central Library, Prague - Czech Republic
*** Charles University in Prague. Faculty of Arts. Institute of Information Science and Librarianship, Prague - Czech Republic
**** Masaryk University. Faculty of Education. Central Library, Brno - Czech Republic

are suggested. The chapter focuses on particular information literacy projects carried out at universities in the Czech Republic. The examples of integrating and embedding information literacy components into the curriculum are pointed out.

Keywords: Information literacy – Czech Republic – higher education – academic libraries – public information policy – information literacy definition

1. Introduction

In the Czech Republic, as in many other parts of the world, the issue of information literacy and user education has been one of the crucial topics for librarians, library science educators and researchers for the past 3 decades. This interest has resulted from both, the influence of foreign literature and cooperation with librarians abroad, and the experience of transformation in the Czech Republic towards the information society.

Information literacy policies set up at a national level for the academic sphere have become a basic frame for programmes and projects, and for theoretical, methodological and practical activities on information literacy. This topic has become crucial in the higher education area given the importance of information literacy for the global society and for sustainable development. The academic environment provides not only the initial education of professionals, but also their further education, which is essential for the flexibility and adaptation required by the changing society. Therefore information literacy, as a vital issue, has become an impetus for changes in the academic area.

Academic librarians have become one of the key actors in the field of information literacy. Nevertheless, they are well aware of the fact that libraries are only one link in the chain dealing with information literacy. The topic is so complex that researching it exclusively from the point of view of library science would never provide a complete set of recommendations and could not lead to the desired solution. Therefore, effort has been put into developing new partnerships – interdisciplinary, inter-institutionally and internationally.

This text provides an overview of activities and initiatives that have taken place in the Czech Republic in the past several years. Therefore, parts of previously presented or published materials were used. For example: (Tichá, 2007; Dombrovská *et al.*, 2006).

2. Information literacy in the Czech Republic

2.1 Using and understanding the term

In the Czech Republic the term Information Literacy was included in public political documents in 1999 for the first time. This year the *National Information Policy* was stated as a strategic document and information literacy was specified as one of the main priorities. The *State Information Policy in Education* followed in 2000 as a strategic document of the Ministry of Education, Youth and Sports and the *State Information and Communication Policy: e-Česko 2006* followed as a strategic document of the Ministry of Informatics in 2004 (updated in 2006)[1]. However, the understanding of the term information literacy in these documents was closer to what we call computer and ICT literacy.

The situation has improved during the last couple of years thanks to developing cooperation between the public policy sector and library science experts. Information literacy is getting recognition that includes all aspects of the concept. Although some ministry officials realize the whole context of information literacy already (including recognizing the information need, location, evaluation and use of information), many programmes for developing information literacy still focus on ICT literacy. One of the consequences of this situation is that most of the programmes and funding opportunities focusing on information literacy development are exclusively targeting skills associated with computer literacy. Without a clear and widely accepted definition included in policy documents, the position is very difficult for individuals (teachers and librarians) and for institutions that try to develop information literacy in our country. For example, this often prevents libraries from applying for funding in order to design and implement new information literacy programs, since to address information literacy needs, libraries in their project proposals usually go far beyond dealing with ICT.

2.2 Defining the information literacy

Defining information literacy the use and understanding of the term information literacy in the Czech Republic differs among institutions. However, to address this, there is an umbrella activity within the Association

[1] Characteristics of these documents follow further in the text.

of Libraries of Czech Universities[2]. The expert team of Information Education and Information Literacy Working Group (IVIG)[3] has taken on the activity of defining the information literacy, creating information literacy standards and surveying the information literacy level of Czech university students. The basis for IVIG's approach relies on IALS/SIALS[4] surveys and their methodology. Information literacy has been divided in IALS into specific areas, which are: prose literacy, document literacy and quantitative literacy. IVIG has added ICT literacy and language literacy (see Fig. 1). This approach helps to understand information literacy and allows focusing on different sets of skills separately. Each of the areas is individually defined and the final set of requirements has become a basis for creating the Information Literacy Standards of the University Student in the Czech Republic. There were surveys done in 2004 and 2005 according to the information literacy standards and the results as well as the definition together with standards are now available for other institutions as an open tool for understanding.

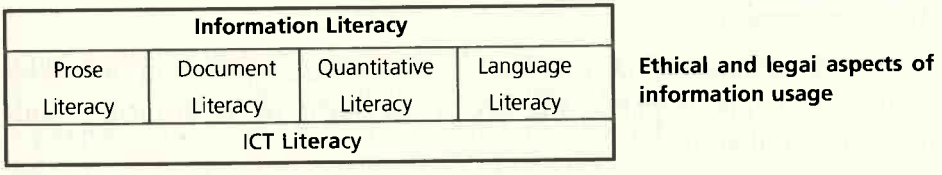

Fig. 1: Model of information literacy created by Working group IVIG based on the IALS/SIALS model

2.3 Information literacy standards of university student

The proposal of definition of Information Literacy became a subject of interesting discussion both within and outside librarian community. The work has moved on towards creating standards of information literacy that would represent the goal we want to reach while providing various forms of information education. We have agreed on the term information education to become a part of Czech library science terminology, serving as an overarching term for all activities that are intended to improve the level of information literacy among the university population. This includes but is distinguished from those activities that always take place in libraries and are

[2] http://www.akvs.cz/en/index.html.
[3] http://www.akvs.cz/en/groups.html.
[4] International Adults Literacy Survey/Second International Adults Literacy Survey http://www.nifl.gov/nifl/facts/IALS.html.

called by terms like *user education, user instructions, and library instruction.* The Working group understands the process of improving the level of information literacy is by using various types of information education to implement the set standards as illustrated on Fig. 2.

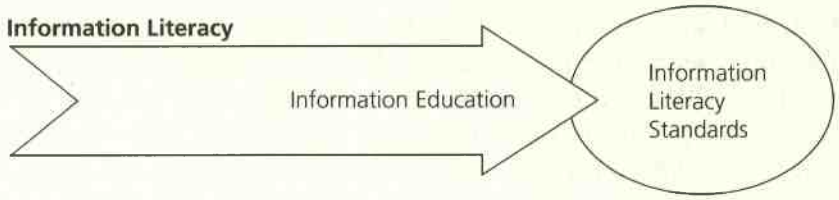

Fig. 2: The process of achieving of information literacy standards by using various formats of information education

3. Information literacy as a public policy issue

3.1 Key actors

In order to characterise properly the information literacy concept in context of the Czech public policy, the key actors ought to be defined – both individuals and groups.

Group actors are:

- Public administration: i.e. Ministry of Education, Ministry of Culture, Ministry of Social Affairs – initiators of public policy in the field of education, libraries, employment, lifelong learning etc.
- Educational institutions: preschools, elementary schools, high schools, colleges and universities who have responsibility for education at various levels leading to the preparation of information literate graduates and lifelong learners.
- Professional organizations: i.e. Association of Libraries of Czech Universities, Czech Association of Librarians and Information Professionals (esp. The Division of School Libraries).
- Libraries: serve as a gateway to the information, and as an information centre, provide information literacy programmes and Internet access.
- NGOs: provide a close connection between information literacy and civic and democratic society development; information literate citizens are able to make informed decisions.
- Media: provide information on information literacy issues to the general public.

- For-profit organizations: employers may have impact on curricula, the graduates' characteristics and national policies.

Individual actors are:

- Politicians: drawing upon experts and policy makers
- Teachers: by participating in educational policy implementation and playing a crucial role in education of lifelong learners and information literate citizens.
- Librarians: providing access to information resources and playing various roles in information literacy development.
- Library patrons: pupils, students, library users and other individuals participating in information literacy programs as users.

3.2 Public policy documents

There are several public policy documents that are crucial for establishing and developing new information literacy programmes. Although the terminology is not unified, which is to be expected considering that the documents were created by various ministries with various points of view, these policies are a big step forward in establishing the information literacy as a substantial policy issue. A summary of the characteristics of selected documents follows:

National Information Policy
(stated by Government decree Nr. 525, May 31, 1999)
The government of the Czech Republic responded to the appeal of the Commission of European Union report *eEurope, Information Society for all* (1999), and *A Memorandum on Lifelong Learning* (2000), by developing several strategic policy documents. The government decree Nr. 113, February 7th, 1999, approved the White Paper – National Programme of Education Development in the Czech Republic. Later that year the government decree Nr. 525, May 31st, 1999 established the State Information Policy as the strategic document, and introduced the connection between the concept of Information Literacy and Lifelong Learning. The State Information Policy in Education was published in 2000 as the strategic document of the Ministry of Education, Youth and Sports.

In this document information literacy is included in main priorities of information society. It is defined as skills to work with information and ICT using and computer literacy is emphasized. In 2000 this approach was

understandable because basic computer literacy skills were priority for working with information in electronic formats.

State Information Policy in Education
(stated by of Ministry of Education, Youth and Sports 2000)
The Ministry of Education, Youth and Sports Department for State Information Policy in Education concentrated on teachers' capability to use ICT in classes. The ministry officials cooperate with academic librarians, so that they could transmit their demands at the official level, and to help to indicate the problems to be solved in practice. Although this department has been dissolved by the new Czech government on June 30, 2007, its objectives, hopefully, remain in the ministry agenda.

In this document information literacy concept is used but only explained and described as ICT skills. Although working with information is mentioned, it is evident that the meaning is focused on ICT using. Lifelong learning is highlighted as one of the highest priorities of information society. Role of libraries as information and education centres is pointed out and programmes of information literacy development (Internet connecting, computers, training of trainers, i.e. teachers and librarians in computer skills) are set. Therefore the IVIG team started a campaign among librarians information literacy to be understood as comprehensive process according to definition used in international literature.

State Information and Communication Policy e-Česko 2006[5]
(stated by Ministry of Informatics)
The State Information and Communication Policy (Státní informační a komunikační politika 2006) was set up by the Ministry of Informatics in 2004 and updated with the subtitle e-Česko 2006. The Ministry of Education, Youth and Sports has been delegated to answer for education development, and the Ministry of Informatics has been nominated to create technical conditions for ICT development and to widen access to the Internet. As a consequence of these divided roles, each of the departments followed different approaches to information literacy. The Ministry of Education has involved itself in information literacy as a subject, and the Ministry of Informatics is focused on computer literacy.

[5] http://micr.cz/files/275/SIKP_def.pdf.

The authors of this chapter have been asked for involving in this document preparation, therefore information literacy is defined in accordance with definitions internationally used at universities. But the ICT and computer literacy is emphasized again. The document implies lifelong learning, e-learning and information education.

Strategy for lifelong learning in the Czech Republic (2007)
(stated by Ministry of Education, Youth and Sports)
The Strategy involves in lifelong learning in detail, it concludes strategic document of the Czech Republic and European Union, Bologna process and many other initiatives. Analyses of Czech conditions and identification of problems in education are submitted. Information literacy is not used in this text. Key competencies are specified, such as functional literacy, methodology competency, ICT use, communication competency, critical thinking, team work, ability to learn, but excluding information literacy.

Strategy of libraries development in the Czech Republic 2004 - 2010[6]
(stated by National Library)
The aim of this document is to enable citizen's equal access to documents and information resources in any format. In the section *Equal access to library and information services* one article is dedicated to information education and functional literacy. Implication of information education and information literacy in education system at basic and secondary schools is pointed out. Recommendation to this aim is: to support partnership of libraries and schools. IVIG team participated at the strategy editing. Nevertheless academic libraries are not mentioned.

Other key documents and policy initiatives
The strategic documents of some universities include as a priority the implementation of information literacy into curricula. On the other hand, some universities have integrated information literacy into curricula without setting this out as a policy in any strategic document. Where this has happened, the impetus comes from university libraries above all, and it is based on national information policies and the strategic documents mentioned above. However, unlike many European universities, most Czech universities have not as yet embedded information literacy into their curricula.

[6] http://knihovnam.nkp.cz/docs/Koncepce04_10.doc.

Librarians of public, academic and research libraries have become partners in discussion at the national level, and they have been included in the key actor's group affecting information literacy development. They have taken advantage of the programmes offered by ministries to set up information literacy projects. The programmes of the Ministry of Education, Youth and Sports focused on education, through programmes such as: *Development programmes for Higher Education,* and *Fund of Higher Education Development.* The programmes of the Ministry of Culture also involve libraries. An example is: *Libraries of 21st Century* or *Public Library Information Services.*

4. Association of Libraries of Czech Universities and IVIG working group

4.1 Context

Czech librarians have always been aware of the fact that libraries should offer and provide various instructional activities to their patrons. Both public and academic libraries have very often provided services of this kind to the community they are serving. In the past, these programmes were normally user education activities. In academic libraries these programmes were very often limited to library tours, introductory workshops for freshmen students and, after electronic resources were available, workshops focused on searching the particular databases. Only a few universities were offering credit courses taught by librarians and focused on the skills and knowledge we consider to be attributes of the information literate individual. Also cooperation between librarians and faculty in designing assignments or providing courses on user instruction was very rare.

On the other hand, working with faculty on improving their research by using wide variety of information resources was always part of the work of librarians' although performed mostly on a one-to-one basis. Overall, the position of instruction librarian, as it is established and understood for example in the United States, has not been clearly defined in our country yet. Instruction in information literacy has not been until very recently been considered to be worth designating as a specific position let alone making into the major role for a whole library department or unit. This situation has improved very much since 1999 when the group of academic librarians came up with the idea to establish a working group that would focus primarily on

issues related to information literacy and user education in the higher education. By establishing of this working group, a very important fact was acknowledged. User education provided by an academic library is a specific problem which must incorporate the development of information literate graduates. Universities are the last link in the chain of formal education that might have impact on students' development as independent and lifelong learners. Also, when providing user education to undergraduate, graduate and doctoral students, not to mention the faculty, librarians are dealing with adults, which is a situation very much different from teaching children or teenagers, and so special attention must be paid to adult education issues.

This evidence, supported by international literature describing good practice and hence becoming familiar with projects taking place in other countries, has convinced part of the Czech academic librarian community that this is a topic that should be of interest. Librarians are convinced that implementing various formats of information education into the library services and possibly into the curricula should soon become one of the criteria for evaluation of universities and their libraries all around the country.

4.2 Working group IVIG and its activities

Academic librarians recognized the implications of information literacy for higher education almost 20 years ago. They have understood the importance of information literacy and have accepted the teaching role proposed by academic librarians worldwide. Previously they had conducted the introductory tours and provided basic information on library services and collections, but from the nineties some librarians began to direct their activities into the education frame and curriculum. They started to promote their best practice among colleagues and decided to establish a working group for information literacy development. The working group was established as a part of the Academic Libraries Section of the Higher Education Council of the Czech Republic in 2000. In 2002, when the Association of Libraries of Czech Universities was constituted, the Information Education and Information Literacy Working Group had been incorporated into the Association. The aims of the working group of IVIG have been stated as follows:

- To support activities of academic libraries in the area of information education and to improve the level of information literacy of students, faculty and library users.
- To provide background and support for the librarians who are adopting

information education and to help them to design their information literacy programs.
- To share experiences in designing, implementing and practicing information education in all its formats (library tours, freshmen introductory seminars, workshops, courses, and tutorials – in both face to face and online versions).
- To contribute to the implementation of information education in curriculum and provide authority and expertise to support libraries in negotiating with university administrators.
- To cooperate in designing online tutorials for library users and to promote them as good practice and as a source of inspiration for librarians and interested faculty.
- To provide and update state of the art surveys of information education in the country and abroad.

The IVIG working group members have agreed to constitute working teams in order to develop plans and to identify requirements. Since the year 2000, several teams have worked on theoretical issues, on surveys, IVIG organized seminars, and cooperation initiatives within the Czech Republic and with other European countries.

A short summary of the IVIG team results follows:
- Information literacy definition as a base for standards of information literate student (stated 2004, updated 2007)
- Standards of information literate student – the recommendation of ALCU (stated 2004, updated 2007)
- Survey of information literacy activities at Czech universities (2000, 2003, 2006),
- Pilot survey of student's levels of information literacy at several universities (carried out in 2004 and 2005)
- Programmes and funding opportunities for information literacy projects (2005)
- Information education online support (project proposal, prepared 2005, but not yet implemented)
- Conception of information education in higher education as a model for university information literacy planning (in preparation stage, expected in 12/2007)
- Seminar IVIG (an annual event from 2003)
- Cooperation, discussions, sharing experiences, current literature research.

4.3 Pilot surveys

One of the crucial projects the group IVIG has been working on so far has been the Information Literacy Survey, or rather its pilot version #1 and #2. The pilot surveys aimed to evaluate the level of information literacy among students at selected universities. Pilot #1 was conducted in spring 2004 and the results were presented in September 2004; the Pilot #2 took place a year later. The questionnaire was created with the cooperation of a sociologist, and data was collected that has provided a good starting point from which to prepare a proposal for a nationwide survey. This proposed survey would cover all public universities in the Czech Republic and would help to assess the level of information literacy. These results could lead to appropriate recommendations and inform steps to be taken in the future to improve information education. Although the survey methodology is developed and there definitely is a demand to have date collected nationwide, a funding source is yet to be found.

Indeed, we are, aware that assessing information literacy is a problem with which many libraries and library science scholars are trying to deal. IVIG considers that the use of a well structured definition that enables creating of lists of certain skills that are actually observable or measurable, is a valuable contribution to solution of this problem.

4.4 IVIG Seminar

An annual *IVIG Seminar* was established in 2003 and it is organized in cooperation with the Association of Libraries of Czech Universities (ALCU), the Institute of Information Studies and Librarianship[7] (Faculty of Arts, Charles University in Prague) and SPRIG[8] (Civic Association for Information Literacy Development). The seminar has become a platform for promoting the results of working groups, as well as a forum for discussions and sharing opinions of colleagues interested in information literacy. It is open to librarians, teachers, students, ministry officials, educational experts and journalists. Guests from the USA, France, Slovakia, Slovenia, Sweden and Scotland have participated in the past years.

[7] More information available at: http://uisk.ff.cuni.cz/index.jsp.
[8] More information available at: http://www.sprig.cz/index.en.php.

4.5 International cooperation

The IVIG seminar has provided a starting point for cross border cooperation. Foreign guests can widen our international partnership by offering participation in events abroad. For instance the association participated in the UNESCO-CEI Workshop on Information Literacy Initiatives for Central and South East European Countries held by ICPE, Ljubljana, Slovenia in March 2006. Arising from this activity association representatives were also involved in editing the brochure *Achieving an Information Society and a Knowledge-Based Economy through Information Literacy: Proposal for an information literacy platform and an action plan for central and south-east European countries* (Pejova *et al.*, 2006).

Cooperation between the Czech Republic and the Slovak Republic has been based on sharing the methodology of surveys focused on the information literacy level of students. The two pilot surveys carried out at Czech universities in 2004 and 2005 were followed by a survey under the same conditions, undertaken at the Slovak universities early in summer 2007. All the results will be mutually compared to indicate similarities and dissimilarities and to discover reasons, consequences and implications. Agreement on further Czech-Slovak cooperation is expected.

4.6 The Conception of Information Education in Higher Education

Developing the Conception of Information Education in Higher Education is the most recent project of the IVIG Group. This document will provide the overview of the state of art in information literacy and information education situation in the Czech Republic, together with priorities defined in order to improve the level of information literacy among university students. The document concludes with a set of recommendations that should become an object of implementation into everyday practice at Czech universities.

The three priorities are:

- Recognition that information use is a complex process,
- Implementing information education into curricula, based on the library/faculty cooperation, and
- Evaluation, getting the feedback and adjusting library services.

These priorities are followed by five recommendations:

- Implementation of the *Standards of Information Literate Student* into the higher education outcomes.

- Effective cooperation of key actors.
- Targeted development of information education projects.
- Proactive promotion of the information literacy and information education, and
- Feedback provided on regular basis through surveys, and the evaluation of information education projects.

This document is in the final stage of preparation[9] and is expected to be approved by the Association of Libraries of Czech Universities before the end of 2007.

5. Academic libraries and information education

5.1 Current trends

An overview of information education at the Czech universities, drawn from the surveys carried out three times in the course of last eight years, gives a picture of different approaches and different conditions. These differences include:

- Implementation of information literacy in curricula,
- Integration the concept in long-term plans of universities,
- Efforts to design new concepts, strategies and plans of information literacy, and
- Creating new job positions for librarians.

Cooperation between teachers and librarians is an indicator of the acceptance of information literacy as one of most important features of education nowadays. A process of development of information literacy strategies at the universities has been evident at most not all Czech universities. Academic librarians have indicated their interest in the information education proposals that are currently being prepared by the IVIG working group. Some academic librarians are working on their own strategic documents, and there is particular interest in the conception carried out at the Czech Technical University in Prague (Tichá *et al.*, 1999).This

[9] as in November 2007.

conception has been the first document which has included main goals, analysis of state of the art of information education at the Czech Technical University in comparison with universities abroad, principles, starting points, information education content and formats and implementation. Examples of good practice have been added as supplements. Use has been made of this model for instruction and inspiration.

The brochure, '*Achieving an Information Society and a Knowledge-Based Economy through Information Literacy*' (Pejova *et al.*, 2006), has led to responses among Czech and Slovak colleagues that reflects the need for a framework model to provide inspiration and suggest recommendations for action. This is evidence of the way ahead in information literacy implementation is through embedding information literacy into higher education curriculum and into education policy at all levels.

5.2 Teaching librarian – the position of the future

Academic librarians' interest in information education and lifelong learning remains mainly on a volunteer base, with only a few university libraries created special job positions for teaching librarians. This restricts the opportunities for librarians to be accepted for teaching courses within the curriculum. The reason given in discussions on this theme by three university professors at IVIG seminar in 2006 was definite: They claimed that librarians have to get competency in the academic areas taught at the university, at the level of postgraduate study. An additional requirement of pedagogical competency expressed by librarians but not by the professors. While librarians are interested in courses offered by educational centres for the continuing professional education of librarians, the main emphasis for most librarians is on changes in curriculum of Library and Information Studies. Those librarians, who teach courses implemented in curriculum, are autodidacts drawing from the lifelong learning courses and experience of colleagues. Learning to teach should be offered as a system covering all aspects of lifelong learning theory and pedagogy.

There are several ways that librarians can be integrated into the educational process. One is the role of teaching librarians and another is to adopt the role of cooperating partners. Being information professionals, they can help in preparing teaching and learning materials for information literacy embedding into subjects. They can assist in classes focussed on information usage in the subjects taught. Cross-institutional cooperation should be based on teamwork and every member should play his/her own role. The motto

"invite librarians into classes" used at the Czech Technical University in Prague reflects this principle.

5.3 Information literacy projects – examples

There are many information literacy projects underway at Czech universities. We have had to make a representative selection to illustrate the diversity of these activities and this has meant not reporting all the high quality projects. Our focus is on providing examples of various types and formats of information education. The brief overview of selected project follows:

Czech Technical University in Prague[10]

Libraries at the Czech Technical University started systematic work on information literacy issue early in nineties. The first information literacy course was implemented into curricula in 1994 with the Faculty of Mechanical Engineering. Since that year many types of courses, seminars and training sessions have been prepared and delivered for undergraduate and postgraduate students as well as for faculty. Those teachers, who recognized information literacy importance for their students also invite librarians into classes. Seminars and training promoting new electronic resources and services have been organized and training has been tailored to the needs of specific target groups. [11]

In addition to mandatory[12] and compulsory[13] courses embedded within various curricula a Web-based course[14] has been created for those users, who want to learn independently of teachers, at any time, using a remote but interactive regime. Web pages of the courses which include basic information on the courses, contacts to teachers/librarians, materials to read, handouts, presentations and links are publicly accessible for students to be able to work within or outside the university network.

Courses and training are focused on electronic information resources use, library (electronic) services, advanced searching in the Internet, technical standards, intellectual property protection, ethical use of information, copyright and plagiarism, citation and citation tools. The format of courses includes lectures, examples and training and also discussion on student

[10] Website: http://www.cvut.cz/en?set_language=en.
[11] Seminars offer: http://knihovny.cvut.cz/en/vychova/seminare.html.
[12] e.g. Information Literacy Course in English: http://knihovny.cvut.cz/courses/index.html.
[13] e.g. Information Literacy Course in Czech: http://knihovny.cvut.cz/en/vychova/vyuka-fs/index.html.
[14] Web-based course: http://knihovny.cvut.cz/en/vychova/infvychova.htm.

information behaviour and routines. The students usually apply the material to the subject of their diploma or theses. Alternatively they can work on a specific topic so that they are able to simulate the processes of recognising the need for information, searching, evaluating and using information including citation.

Czech University of Life Sciences Prague[15]
The Study and Information Centre of the Czech University of Agriculture has been taking steps to develop the information education system for the past several years. The target group consists of students (undergraduate, graduate and doctoral), as well as faculty. The librarians provide the introductory seminars for first year undergraduate students. These seminars are followed by workshops for students working on their bachelor or masters thesis. Special attention is paid to the new doctoral students, who are introduced into the database search process in depth. They also become familiar with designing their own personal bibliography using specialized software. The library also provides users with numerous brochures, leaflets and how-to-do-it manuals. In addition, the instructional section of library website is updated regularly and the first steps are being taken in order to establish an online reference service.

Masaryk University[16] (Faculty of Education)
The librarians at Masaryk University in Brno, Faculty of Education gained a very interesting experience by developing a web-based information education project. The online course called *"How to work with professional information"* was created on the Moodle platform (a course management system, a free Open Source software package for creating online learning communities), and consists of several learning units, discussions, assignments and tests. Evaluating the students' performance is part of the course as well. Transforming the educational activities into the online environment was a new experience among Czech academic libraries, and in this case a very successful experience.

VŠB-Technical University of Ostrava[17]
The website of VSB-TUO Library is a wonderful example of user-friendly support for students, faculty and other user groups. The set of online

[15] Website: http://www.czu.cz/en/.
[16] Website: http://www.muni.cz/?lang=en.
[17] Website: http://en.vsb.cz/.

tutorials available at the website is an exemplar model for both content and design. There are tutorials for new students who are making their first steps in terms of searching information resources and there are also tutorials for those who are doing the finishing touches on their theses. The design is very modern and attractive and includes practical illustrations and animations.

5.4 Deficiencies and hindrances

Both electronic and printed information resources and technical equipment at the Czech universities are sufficient for information literacy development. However, the indications from the surveys of information education at the Czech universities show deficiencies and hindrances in the current state of art. Challenges for the future development of information literacy can be recognized in three areas:

1. Staff
- Librarians are not prepared appropriately for the teaching role.
- Many teachers are not skilled enough in information usage themselves.
- Many teachers are not interested in, or encouraged to change their teaching methods, which are currently based on lectures and textbooks.

2. Administration of the education scheme
- Lifelong learning has been acknowledged as an essential point but the importance of acquiring lifelong learning habits in course of undergraduate and postgraduate study has not been fully valued yet.
- Information literacy has not been taken into account in the implementation of the Bologna process principles.
- Teaching methods do not involve demands on everyday information usage.
- Hours are not allocated for information literacy within curriculum.
- Librarians are not members of academia, and are rarely engaged as pedagogical staff.

3. Cooperation
- There is a low level of cooperation between faculty and librarians.
- Special departments for teaching support (e.g. teaching and learning centres) are distinct from libraries in the university structure, and there is limited cooperation.
- Cross-institutional and cross border partnerships have not been sufficiently developed.

6. Conclusions

Czech universities have had to pursue many changes in their curricula and in administration during the last two decades and developments in information literacy were initially left behind in many cases. Although the surveys on information education mentioned above have identified progress, full implementation of information literacy into higher education requires a transfer of responsibility for information literacy from solely a matter for libraries into a shared responsibility in higher education context.

Academic librarians in the Czech Republic have moved ahead in information literacy in comparison to the situation ten years ago. They have recognized the implications of information literacy for lifelong learning and hence for the requirements of higher education in the 21st century. They have located their position within the university framework and accepted necessary changes in their work and education. Where faculties have adopted librarians as partners, librarians have been able to contribute to reforms related to the Bologna process. So far however, this practice is an exception, not everyday practice. Cooperation with colleagues from abroad could help librarians to further integrate information literacy practices into the European region, to adopt best practice and to participate in European programmes.

The implementation of Information Literacy is a very dynamic process, and is often very unpredictable as new needs and topics appear. On the other hand, when looking back at what has been done and what kind of issues has been encountered, an interesting pattern has emerged. There is a pattern of combining theory and practice, so that these elements complement and support each other and help us to proceed forward in our effort.

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for promoting of information literacy, including the educational implications, within the Czech Republic and abroad.

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FRANCE*:
THE COURAGE TO SAY "DOCUMENTATION"

*Lisa Reggiani***

> *La documentation n'est pas une fin en soi. La fin pour l'enseignement, c'est l'acquisition d'une* culture, *d'une formation de la pensée et d'une méthode. La documentation est le point de départ de la réflexion et de la recherche.*[1]
> (Circular 13th October 1952: *The role of documentation in secondary education.*)

* The present article is greatly indebted to the following works: Dubois, A.-C. (2004). *LMD et formation à la recherche documentaire en bibliothèque universitaire: ruptures ou continuités.* Mémoire d'étude. ENSSIB; Durpaire, J.-L. (2004). *Les politiques documentaires des établissements scolaires.* Rapport à monsieur le ministre de l'éducation nationale, de l'enseignement supérieur et de la recherche. Rapport IGEN n. 2004-037 (May 2004); Chevillotte, S., & Noël, E. (2003). Training in information literacy in France. In C. Basili (Ed.), *Information Literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union* (pp. 70-87). Rome: CNR - National Research Council.

** Consiglio Nazionale delle Ricerche (CNR). Istituto di Ricerca sull'Impresa e lo Sviluppo (Ceris), Rome - Italy

1 "Documentation is not an aim in itself. Its aim is education, i.e. acquiring a culture, a *forma mentis*, a method. Documentation is the starting point for reflection and research".

Abstract

The article is centred upon the French exceptionality in comparison with other European countries. France has given much room to documentary education in the different educational levels, strongly linking it to scientific research and methodology and progressively encompassing the urgent international information literacy issues, by integrating them into its traditional structure.

Between *Documentation* and *Information*, the two fundamental poles, in fact, *documentary education* and *information literacy* have been shaped and developed in the course of time: thus both are examined by tracing the political institutional steps of the recent history, and across higher and school education, particularly focussing on the crucial dialectic between documentalists and disciplinary teachers.

Finally, the main experiences and attempts towards standardisation and homogenisation are highlighted, which involve the whole of French society, at a political, educational and professional level: trials and progress towards certification, towards the development of a portfolio of I&D competencies and of broader *référentiels*, and some more ambitious attempts to build a single documentary *curriculum*, from pre-school to university.

Keywords: Documentary education – Information Literacy – scientific research – documentary curriculum – French documentary policies – certification of information competencies – I&D référentiels

1. The French exception[2]

In the variegated panorama of Europe, the French experience immediately stands out due to a striking singularity: within the wide range of expressions used to indicate information literacy (IL) and information literacy education, the *documentary element* tenaciously persists and still predominates today.

In the university sector, *formation documentaire, formation à la documentation, formation à la méthodologie documentaire, formation à la*

[2] All the URLs mentioned in the text were last accessed on 24th June 2008.

recherche documentaire, formation aux outils et aux techniques documentaires[3], in fact, emphatically express the native and deep relationship between the "new education" and the noble documentary tradition, ancient and deep-rooted throughout the French-speaking area. Other used nexuses – *formation à l'information scientifique et technique, formation à l'information, formation à la maîtrise de l'information, formation à l'usage de l'information, education à l'information* – gradually and increasingly give way to the word *information,* strongly predominant, if not exclusive, elsewhere in Europe.

In the school world, too, the traditional and prevailing *Documentation* comes side by side with the more topical and emerging *Information*: in the first field there is a recurrence of *formation documentaire* – which is not by chance essentially understood as *formation méthodologique* –, *formation méthodologique documentaire, formation à la recherche documentaire,* to which are added *formation en documentation, initiation aux recherches documentaires, acquisition des compétences documentaires*; within the second domain, *formation à la maîtrise de l'information* and the broader *education à l'information* recur, but there are also *acquisition des compétences en matière de maîtrise de l'information, formation aux compétences informationelles, apprentissage de la recherche d'informations, connaissances et compétences relatives à la culture de l'information, éducation à la culture informationnelle.*

Attempts to reach a synthesis common to higher and school education have been made, such as *education à l'information et à la documentation, compétences en matière d'information et de documentation, compétences documentaires et informationnelles* and the more detailed *acquisition de techniques documentaires nécessaires à la recherche d'informations,* all of which have the merit of showing the fundamental connection between the two spheres.

Besides, in France a high sensitivity towards Information Society (IS) topics has long been very widespread, alongside social awareness of the importance of scientific and technical information (STI) and its mastery and of the need to develop a relevant national policy.

Therefore, the old and the new coexist in a certainly possible harmony: on the one hand the firm, durable, and sturdy architecture of documentation and on the other hand the composite galaxy of information skills, able to

[3] Those are the terms pertinent to IL, to which *formation des usagers* is added (which is narrower and more connoted in a library sense), exactly corresponding to *user training*/*user education* and extremely common in the recent past.

incorporate the shifts and challenges of the Knowledge Society and Knowledge Economy into its rapid dynamism.

A second crucial feature is the strong link to *research*: in fact, the "research" factor – understood in a broad sense (cultural, scientific, and methodological), which starting from a solid knowledge structure progressively encompasses competencies, know-how, and techniques – is the *Leitmotiv* of educational policies and a key issue in the school and university programs and *curricula*. Moreover, the connection between research as *forma mentis* and methodology on one side and documentation and documentary education on the other has a unique and irreplaceable value not only for higher education but also for primary and secondary school education.

Finally, two conflicting demands, both of which must be met, jeopardize the past stability of the French educational system. On the one hand, there is the need to preserve or rather enhance educational excellence - in both school and university - in order to face more and more fierce global competition or, to quote a favourite political expression, "the worldwide battle of intelligence"[4]. On the other hand, mass school and mass university must strive for the progressive democratisation of culture and knowledge and hence ensure that everybody gains access to education and is better integrated in tomorrow's society.

At an educational, institutional, and political level, the proposed solution consists, first of all, in opening up to the world of work and in professionalising competencies and skills aimed at practical and applicable objectives; there should also be a closer connection among the various education levels, in view of full occupation and active and effective citizenship.

Moreover, the impact of globalisation and the recent introduction of the unique European education space violently dramatise the situation: the failure of the school system and the university drop-out rate have noticeably increased and this serious social alarm forces the whole society to radically and totally rethink education.

By joining past and present-future in an exemplary manner, *Documentation* and *Information* indicate the only feasible way. Albeit in a limited sphere, they are in fact successful in creating a new dialectic between tradition and innovation, i.e. between the breadth of the theoretical-methodological perspective and the wide horizon of research within the framework of *disciplines* on one side and current suggestions for pedagogical

[4] (*Lettre de mission Pécresse,* 2007; *Lettre de mission Darcos,* 2007).

renewal, concreteness, experimentation and testing on the other side, all suggestions which reformulate general education in terms of *situated learnings*, of *trades and crafts*, of *skills and competences*. In a large number of grassroots attempts, they try to organise themselves in a *single documentary curriculum* and thus to build a continuous program of documentary education, in accordance with shared standards, ranging from preschool to university.

2. The political-institutional context: A brief historical outline

2.1 Early foundations

In France, the technological revolution and the information explosion precociously created extensive social and political-institutional awareness, quickly acknowledged by public authorities through incisive interventions and effective actions.

In fact, this careful attention and the effectiveness of the adopted measures have characterised the French situation, together with the well-known State centralism of initiatives.

In opposition to the majority of European countries – where the importance of information and of the new demands for information and documentation literacy has mainly stemmed from the Anglo-Saxon experiences, that of the USA *in primis*, and of Britain and Australia – in France there has been a great fervour of activities since the 1970s. Wide experimentation and didactic reflection were combined with the adjustment of the main theoretical and methodological foundations of education, together with a strong national STI infrastructure and its coherent articulation[5], having at its core the BNIST - National Office of Scientific and Technical Information (*Bureau national de l'information scientifique et technique*), established in 1973, which played a key role and whose mission was to define and promote a national information policy.

Therefore, the two main guidelines, along which the institutional intervention developed, originated from the Information and Documentation world on one hand and from the Education world on the other hand.

[5] Cf.: Cacaly, S., & Le Coadic, Y.-F. (2007). Fifty years of scientific and technical information policy in France (1955-2005). *Journal of Information Science, 33*(3), 377-384.

In 1971, the Committee for preparing the Sixth Plan[6] emphasised, with regard to STI, "the necessity of basic training, which had to start in secondary education and continue and intensify in HE".

The "Training of student users in HE" think-tank, established by the BNIST in 1974, successfully applied itself to study, practical experimentation in several universities, awareness, and promotion. Based on the above, its concluding recommendations focused on the importance for university students of training in how to use information, which had to be integrated into the *curricula*, as far as to become "part of the university syllabus", and had to be based on the strong and durable cooperation between teachers and information professionals (Chevillotte & Noël, 2003).

Between 1976 and 1978 the BNIST carried out some pilot experiences in six HE institutes, among which the ENPC - National School of Bridges and Highways (*École Nationale des Ponts et Chaussées*), a very old and prestigious Civil Engineering School, and the equally famous CNAM - National Academy of Arts and Crafts (*Conservatoire National des Arts et Métiers*).

Critical reflections on the "integration of information use in pedagogy" were made by the Pedagogical Research Group of the Conference of the Grandes Ecoles, set up in 1978.

Hence, in the 1970s the information and documentation professional universe and didactic-educational research started to move in the same direction and to outline the same analytical picture and the same set of operational proposals.

Other critical events, rapidly following one another, equally involved the two main levels, information and education, consolidating a ground common to both, a fertile substrate for the national education policy of the following decades.

In the 1980s training and education in documentation and information improved and expanded; at the same time, "structures devoted to STI, such as the CADIST – Centre for Acquisition and Spread of Scientific and Technical Information (*Centre d'Acquisition et de Diffusion de l'Information Scientifique et Technique*) and the network of URFIST - Regional Units on Education in Scientific and Technical Information (*Unités Régionales de Formation à l'Information Scientifique et Technique*)" developed further (Sicot, 2006).

[6] Cf.: http://www.cge.asso.fr/groupeformation.phtml.

In particular, in 1981 the MIDIST - Intergovernmental Mission of Scientific and Technical Information (*Mission Interministerielle de l'Information Scientifique et Technique*)[7], heir of the BNIST from 1979, commissioned from the Conference of the Grandes Ecoles a program for the gradual integration of information literacy into their curricula.

In the 1980s a growing number of experimental training programs were carried out in the Grandes Ecoles, thanks to a joint initiative of the MIDIST, the Ministry of Research, and the Conference of the Grandes Ecoles. They produced further reflections and a wave of studies, reports, and meetings among experts, within a heated national debate.

The Conference of the Grandes Ecoles, with its active think tank "Training in the use of information", has still been in the forefront.

In 1982 the regional structures of the URFIST were created; they were joined in a network and their original mission was to train librarians and information professionals as well as academic teachers and postgraduates in information skills (STI seeking), and, more generally, in using ICTs.

Thanks to a complete maturation and intensive experimentation, the following decades saw important political initiatives and incisive institutional interventions in the two spheres, both at a theoretical and at a practical level.

During the 1990s, in conjunction with the generalised spread of documentary training in HE, the Ministry of Research committed itself to integrating it into academic curricula, based on the close collaboration between LIS professionals and teachers, so that it would reach 20 hours at least. Some reports from institutional sources also marked the decade.

The Mayer report *Information and competitiveness* (*Information et compétitivité*) – on the initiative of the Commissariat général au Plan (CGP), the French State General Planning Commission – publicly announced training interventions in the first cycle of HE and in further education; the necessity of relevant, effective interventions was vigorously reaffirmed in 1991 by a working group of the Ministry of Research and Technology, presided by Hervé Seyriex.

[7] whose mission is "to study and propose to the government the trends of a national policy in the field of scientific and technical information, to incite the agencies' work and assure their coherence and... [to coordinate] sections dealing with information policy within each government department". Cf.: Buchwald, C. (1995). *Canada in Context: An Overview of Information Policies in Four Industrialized Countries.* IPRP [Information Policy Research Program] Working paper n. 2. University of Toronto. Faculty of Information Studies (November 1995). <http://www3.fis.utoronto.ca/research/iprp/publications/wp/wp2.html>.

Two significant reports – both on the Senate's initiative – followed: the Serusclat report, *New technologies and citizenship* (*Les nouvelle technologies et la citoyenneté*) of 1991, and the Gerard report, *Networks and multimedia in education* (*Réseaux et multimédia dans l'éducation*) of 1997, which recommended "the development of modular teaching, coordinated by the documentalist teacher, whose progress, timetable, and pedagogical modalities are set within the organisational project".

Surveys, studies, proposals, and concrete actions all occurred between the two pivotal breakthroughs in the French education reform, with special reference to HE: the "Savary Law" (1984) and the "Bayrou Decree" (1997). The "Savary Law" explicitly stressed the methodological and research factor in academic studies, insisting on the necessity for students of acquiring work and research methods in the traditional first two-year university cycle, the DEUG - Diploma of General University Studies (*Diplôme d'études universitaires générales*)[8]. The "Bayrou Decree" (1997), ratified the official inclusion in the DEUG of a fundamental teaching unit, the MTU - Methodology of University Work (*Méthodologie du Travail Universitaire*), in which documentary education plays a key role, and implicitly acknowledged the decisive importance of mastering documentary methodology for success in HE[9].

The new didactic unit – created in order to fight the high university drop-out rate afflicting the country – was characterised by an integrated perspective, trying to harmonise a founding theoretical-methodological approach, general and transversal to the disciplines and peculiar to the most illustrious French scientific and academic tradition, and the current demand for early tackling of real life, which means situated knowledge, abilities, and

[8] Cf. the Savary Law (n. 84-52 of 26th January 1984) Art. 14: *inter alia*, the first-cycle university studies should enable students "to acquire the work methods and become aware of research".

[9] Cf. the Bayrou Decree (09-04-1997)) Title II Art. 6. Among the three teaching units constituting the initial semester of the DEUG there is a unit "of methodology of university work", which enables "learning of methods, practices, and know how required for success in university studies"; then the centrality of the student's skills "in building his/her educational project and in developing his/her autonomous skills in academic work and life, in written and oral communication, in practice of a foreign language" is contextually remarked. IL contents, scattered throughout the different academic *curricula*, precisely gather in those spheres (Personal and Professional Project – PPP; expression and communication; foreign language). Finally, the *BOEN – Official Bulletin of the Ministry of National Education (Bulletin Officiel de l'Education Nationale)* of May 2007 lists in detail the contents of the MTU modules, clarifying its specifically *documentary* nature: "this unit contributes to promoting students' autonomy and provides them with methodes and techniques useful in the pursuit of their studies: preparing a bibliography; using a library and new information sources; taking notes, summarising a paper or a book; learning to work in teams; [...]".

know-how, and therefore concrete problems, practical and professional techniques, project strategies, experiential modules. All this was in favour of a more pragmatic knowledge and learning model, fluid and adaptive in the customisation of educational paths.

At the same time, the duties of librarians and information professionals multiplied and the role of libraries extended more and more, also and above all in the educational field.

In 1992 librarians significantly modified their statute, broadening their mission to include user training; in 1998 the SDBD - Sub-Division of Libraries and Documentation (*Sous-Direction des Bibliothèques et de la Documentation*), part of the Ministry of National Education, Research and Technology, fully maximised the wide experience accumulated through the years by the URFIST and acquired a role of growing importance, expanding its attributions with regard to library user training.

Between 1997 and 2000 the functions of library and LIS professionals focused on a main action line: *user education* or *user training* in the information universe.

In January 1998, through his public declaration *Preparing France to enter the information society* (*Préparer la France à l'entrée dans la société de l'information)*, the Prime Minister presented the PAGSI - Governmental Action Plan for the Information Society (*Programme d'Action Gouvernemental pour la Société de l'Information*). The first chapter, "The new ICTs in teaching", showed the urgency of didactic action and political-institutional anxieties on this issue; the title "Promoting diffusion of resources" included "user training in documentary research and electronic information resources"; more specifically, it emphasised the role of university libraries which, in order to ensure and spread access to digital information, "are massively implementing training programs on documentary research and electronic information resources. In two years, 100,000 students will be involved."[10]

At the same time, in a report to the Senate, *University libraries: the times of changes and transformations*[11], academic libraries are identified as a key factor for education in university work and a powerful tool for upholding and increasing social equality.

[10] Cf.: *PAGSI - La mise en oeuvre du Programme d'Action Gouvernemental pour la Société de l'Inform@tion* <http://www.education.gouv.fr/realisations/communication/samra.htm>.

[11] Lachenaud, J.-P. *Bibliothèques universitaires: le temps des mutations.* Rapport d'information 59 (98-99) <http://www.senat.fr/rap/r98-059/r98-059.html>.

The two legislative measures on education mentioned above still remain true pillars of the national HE reform, able to outline a straightforward political path and to design a clear, detailed and on the whole consistent overview.

2.2 New university organisation between tradition and innovation: from heterogeneity of experimental fragmentation to a new equilibrium

As regards training in documentary research – in the model designed by the institutions and established in concrete practice – there clearly is a university-university library dualism which, due to a wide range of specific applications, involves, depending on the situation, distinct or overlapping roles, collaboration or even true integration.

Even though the Bayrou Decree recognises the autonomy of single universities and some universities do not turn to their libraries for documentary training, for the most part the role of university libraries consolidates in this respect.

As a consequence of the Bayrou Reform, some typical characteristics appear more and more clearly, intertwined with many limits and structural shortcomings:

- Training is not systematic; on the contrary, it appears highly fragmented and diversified, with strong differences among universities and disciplines.
- In the majority of universities, training is provided during the first cycle – as indeed set out by the Bayrou Decree; however, since it is not regulated, training offered in the second and third cycle is much more casual and precarious, with strong elements of uncertainty both from an organisational point of view and in relation to contents.
- For the most part, training sessions offered by university libraries are extracurricular because of the discord – open or latent – with disciplinary teaching and the problematic collaboration between librarians and teachers.

This creates a disciplinary teachers-librarians duopoly, which ranges from distinction of roles and their clear separation – careless indifference, mutual incomprehension, concealed hostility – to their overlapping – even as far as tough competition and intense rivalry – to partnership and proactive cooperation and, in the most successful cases, growing integration.

The educational collaboration between librarians-documentalists and disciplinary teachers essentially takes on two forms, which equally involve both professional poles:

- At a theoretical level, planning activities aim at defining objectives: for teachers, depending on the disciplines; for librarians-documentalists, in the perspective of research methodology steps and acquisition of useful tools that are more and more sophisticated and punctual;
- At a practical-operational level, librarians-documentalists focus on research tools and techniques, while teachers see to actual disciplinary aspects.

According to the double nature of the MTU, training includes and further develops two main components, which involve both types of educators, disciplinary teachers and librarians-documentalists. One is the more abstract, scientific-methodological component, coherent with the traditional style of French academic education. The other component is more practical, technical and situated, and linked to concrete activities, problem solving, and know-how; it was introduced more recently and it is based on the principles of constructivism and cognitive psychology.

These prevailing trends have been getting stronger due to two new important and strictly related elements: the new European HE Area and the so-called LMD Reform.

The new common HE Area was established and implemented through a process from Sorbonne (1998) to Berlin (2003); at a political-institutional level and in broad sectors of cultural and scientific life, serious considerations on the failure of many young people in the first university biennium are enlivened by repeated denunciations and alarming cries raised by authoritative and influential voices; the significance of methodological education, *in primis* documentary, for academic success is stressed from several parties and awareness in this regard rapidly spreads.

This is the climate in which the LMD (*Licence-Master-Doctorat*) Reform[12] matured: by rearranging the French higher education system, introducing the 3+2+3 model (Bachelor-Master-Doctorate), the reform radically renews university studies, adapting them to the European structure. As for Bachelor's degree-related education, the text of the Reform explicitly mentions[13] *documentary training* as an element of vital importance: "it integrates and combines learning of university work methods with training programmes on the use of documentary resources."

[12] Legislative decree of 23rd April 2002.
[13] Title 2, Article 13.

Nowadays documentary training must be part of university teaching, both as an independent didactic unit and within other didactic units (Dubois, 2004).

The partnership with the university library remains implicit and, consequently, its crucial role is implied, as also proven by the financial support provided by the same law for both key training figures, teachers and librarians-documentalists. The essential function fulfilled by university libraries is reasserted by the Ministry of Higher Education and Research. On a webpage dedicated to libraries, dated November 2007, after effectively summarising the main concept with a large title in bold – "The main role of libraries is to accompany and support teaching and research activities" – the Ministry explicitly ascribes to them the mission to train in using documentary resources. A little further, among the four main action lines endorsed by the Ministry, there is in fact "training students and researcher teachers in searching for and using information"[14].

The start of the LMD Reform – whose full implementation is planned for 2010 – immediately and deeply affects the various forms of documentary training in universities, so that three essential features can be identified:

1. Inclusion of documentary training into State-authorised courses ensures its higher stability, thanks to its longer duration, didactic continuity, and guaranteed financial resources, and fosters its growing integration into curricular units.
2. Its constant and generalised increase involves a growing number of students at all three academic levels; the module is compulsory in the first and second cycle, being seen as a crucial factor in academic education, but optional in the doctorate degree, in order to favour the autonomy of mature students, already aware and capable of managing their own information needs.
3. There is a marked trend towards homogenisation and a better harmonisation of teaching. Thanks to the new arrangement of academic studies in three degrees, teaching is reorganised becoming more differentiated and at the same time more flexible, organic, and complete: in fact, despite the multiplicity of single experimentations, there is a unitary evolution towards a better distribution and differentiation of educational contents, divided into the three cycles.

However, the Dupont report (2003-2004) highlights that a huge failure and drop-out rate in the first cycle still persists, and appropriate measures

[14] Cfr.: http://www.enseignementsup-recherche.gouv.fr/cid20545/les-bibliotheques-universitaires.html.

must be taken against it, to improve student guidance and counselling, pedagogical support, coaching, mentoring, and methodological education.

It can rightfully be supposed that, although it completely omits the matter, the University Reform of 2007 – the LRU Law concerning the Freedom and Responsibilities of Universities (*relative aux Libertés et Responsabilités des Universités)*, or Pécresse Law about academic autonomy[15] – will allow and even encourage the strengthening of these processes. In fact, the Law arises from a disenchanted analysis of the present condition of the French university system, certainly worsened by the delay in implementing the LMD Reform and by the sluggishness with which the gigantic bureaucratic machinery is accepting innovations and changes. First of all, the Reform should permit "to make university attractive" and "to overcome the paralysis of the current governance", characterised "by a lack of leadership and guidance, a lack of transparency and a lack of openness towards the outside world"; it should also "lead 50% of young people to achieving a higher education diploma and provide young people with qualifying education, able to ensure a professional future for them"[16], by strongly strengthening the link among secondary school, university and the labour world. The Law aims at remedying the "intolerable mess" of persisting university failure and the "inadequateness of several HE courses of study for the needs of the labour market" (*Lettre mission Pecrésse*, 2007).

Besides, achieving these two major objectives – fighting academic failure and creating a more effective connection between the university and the labour world – is exactly what education in documentary research aims at, as it combines theory and practice, scientific-methodological education and operational techniques and strategies, transversal and specialised knowledge, competencies, skills and know-how, progressive emancipation – both educational and personal – of students through the PPP - Personal and Professional Projects. It also deliberately fits in the broader horizon of pedagogical renewal involving the whole European Union, whose keywords and slogans are indeed *active teaching* and *active learning, learning by doing, key competences for lifelong learning, independent learning* and *learning to learn.*

In short, cognitive psychology and constructivism once again.

[15] Law n. 2007-1199 of 10th August 2007
<http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000824315&dateTexte=>.
[16] Cf.: Pourquoi la réforme de l'université. *Nouvelle Université,* 12th September 2007 <http://www.nouvelleuniversite.gouv.fr/-pourquoi-la-reforme-de-l-universite-.html>.

2.3 The world of school

The school universe follows a route that is parallel to that of the academic world, characterised by several similarities, though less conspicuous. It displays two main features: early awareness by public powers of the need for massive documentary training programs starting from primary school; and increased duties given to libraries/information and documentation centres, invested with the key role of *educators*, a role which is consolidating more and more.

It certainly is neither a mere chance nor a terminological whim if in France a normal school librarian is called "documentalist teacher" (*enseignant-documentaliste*)[17].

Nevertheless, with regard to documentary training, there still is a general lack of explicit and structural connections among the three major educational degrees – primary school, secondary, and higher education –, which no doubt reflects the lack of an overall organic and coherent documentation policy.

The main steps marking the history of documentary training in schools are the following.

The legislative decree "Educational contents for primary education – middle cycle"[18] dates back to 1980. It establishes an implicit but revealing link between reading and information literacy[19], and it clarifies two objectives common to primary schools and libraries:

- To motivate pupils to read, preferably entire works, so that their needs can be satisfied;
- To develop pupils' competencies in I&D, by teaching them how to search for, use, and manage information, documents, primary and secondary sources.

Moreover, in 1986[20] a circular entrusts the librarian-documentalist of each documentation centre with the training of pupils in the basics of documentary research.

[17] exactly corresponding to the academic *professeur-documentaliste*.

[18] Decree of July 1980 published in the *BOEN*, n. 31, 11th September 1980.

[19] At European level, the same connection is very strong in the German and Austrian areas, where there are various pilot experiences of IL in primary education; and, in this respect, there is an intense educational activism from school and public libraries. Cf. the EnIL European Observatory on IL Policies and Research <http://www.ceris.cnr.it/Basili/EnIL/gateway/gatewayhome.htm> – Austria and Germany sections: http://www.ceris.cnr.it/Basili/EnIL/gateway/root_Austria.htm and http://www.ceris.cnr.it/Basili/EnIL/gateway/root_Germany.htm.

[20] Circular 86-123 of 13th March 1986.

In the following years, the unstoppable spread of cognitive psychology and the predominant constructivist trends, as well as some reform interventions, mark the pedagogical and didactic debate. Particularly noteworthy are the introduction, since the 2000-2001 SY, of the TPE - Supervised Personal Works (*Travaux Personnels Encadrés*)[21], which deliberately have the same scope as the academic MTU, and the introduction, in 2002, of programs for primary school[22], which emphasise the focal points of the previous rules and regulations on both topics, i.e. library and school, librarian and teacher. They display a renewed stimulus to reading and a hint at new information supports, documentary research, searching for and directly handling documents, focusing on active learning and the central role of pupils.

The new programs for primary school – published in the *BOEN - Official Bulletin of the Ministry of National Education* on 19th June 2008[23] – are characterised by the will to fight, right from the beginning of the pupils' school career, the high failure rate affecting French schools. Open about the methods but clear and precise about the results required at each level, they do recognise that "learning paths are plural and complex" but are compactly and steadily focused on the "essential teachings, whose mastery will be indispensable to enable pupils to gain access at a later stage to other knowledge fields".

Together with an explicit orientation towards the acquisition of basic knowledge, the relevance of cognitivism and constructivism is again the strongest element: in fact, pupils shall be motivated "to reflect on texts and documents, interpret, build an argumentation", in short, "to mobilise their knowledge and competencies in gradually more complex situations, in order to argue, research and reason on their own". Documents, research, critical interpretation, autonomous reasoning: as this brief description already shows, among "the knowledge and competencies which shall be mastered at each level of the common core" several are related to IL, documentary training, and similar or partially overlapping topics.

Information and *documentation* explicitly appear in the "in-depth study cycle", the second cycle of primary school (children ranging from 8 to 11

[21] See *infra*, the following par. *Towards a portfolio of I&D competencies?* The circular of 28th March 2003 (published in the *BOEN*, n. 14, 14th April 2003) mentions the "*documentation* and preparation of an argumentation", exactly referring to the TPE (Rapport IGEN, 2004).

[22] Decree of 25th January 2002, published in the *BOEN*, special issue n. 1, 14th February 2002.

[23] Horaires et programmes d'enseignement de l'école primaire. *BOEN*, special issue n. 3, 19th June 2008.

years of age). After the peremptory statement that "digital culture requires the rational use of informatics, multimedia and the Internet", three areas are recommended: "to create, produce, handle, manage and use data; *to get information, to document oneself*; to communicate, to exchange", and finally some IL basics, specifically related to Internet searching. Then, among the indispensable competencies of the common core, there is *the mastery of the ordinary I&C techniques*, including all the IL basic skills: "to use digital devices to get information, document oneself, present a piece of work; to use digital devices to communicate; to give proof of one's own critical mind when presented with information, its handling and management". Moreover, reading literacy presupposes not only a satisfactory library instruction, but also the ability "to search for information, overcome a difficulty; to carry out researches with the help of adults, using documentary works (books and multimedia products)".

In general, in secondary education, despite a wide variety of experiences, a unifying line persists, i.e. the constant presence of two pairs: school-library/documentation centre (BCI/CDI)[24] and teacher-librarian.

On the basis of a study made in 2005[25], in the *collèges* – the first 4 years directly after primary school – as well as the usual problem of disinterest or lacking collaboration from teachers, another two key places in the school institute come into play competing with the library, which are rich repositories of documentary resources: the history and geography lab and the science lab. Once again, insufficient education in documentary research, not yet generalised, causes a poor use of the school library on one hand and on the other hand keeps the awareness of the centrality of documentation from fully penetrating into the whole educational community (Gentil & Verdon, 2005).

In the last few years, the demand for a documentation project[26] has been spreading, since it is considered by many documentalists necessary and decisive not only to increase the CDI role, obtaining its recognition and

[24] Respectively, the French school libraries – BCI (*Bibliothèques/centres d'information*) – and information and documentation centres – CDI (*Centres de documentation et d'information*).

[25] (Gentil & Verdon, 2005). The paper reports the results of a survey conducted at the end of the 2002-2003 SY among the documentalists and school heads in more than 5000 public *collèges*, concerning the existing documentary resources, current activities and projects.

[26] From the same study it results that in 2003 in 3 *collèges* out of 10 any idea or perspective of documentation project was absent, whereas in more than half one was already formalised, often only with the involvement of the CDI.

bettering the institute system on the whole, but also to set up or enhance the pupils' documentary education by organising it at best.

Documentary education tends to be articulated routinely, in an uniform and regular way: in the first classes it is prevalently reduced to theoretical, conventional and stereotyped library instruction sessions; conversely, in the next years, it follows a more functional and effective approach, focusing on information and its searching, on its being crucial and problematic in the Information and Knowledge Society, on the use of different media and tools and in particular the most popular of them, the Internet.

These trends are coherent with the pedagogical and experimental reflections developing since the first half of the 1990s.

The major obstacles to formulating a documentation project for school institutes and carrying it out are, once again, the unsatisfactory collaboration with teachers and the instability of dedicated teams.

2.4 A unitary political tendency

Both mission letters dated 5th July 2007, addressed by the President of the French Republic respectively to the Minister of HE and Research, Valérie Pécresse, and the Minister of National Education, Xavier Darcos, contribute to outlining a recent, realistic and unambiguous picture of the national educational policy.

The first letter states that it is "imperative" for France "to reform its university and research system" in order to enable it to fully participate in "the worldwide battle of intelligence", rapidly leading "a larger number of baccalaureate holders to HE, a larger number of university students to degree completion, a larger number of graduates to jobs". This means to reconnect the threads of that continuity – repeatedly called for by many sides – which is often very weak in many points or dramatically interrupted. Therefore, it is necessary to propose educational programmes able to support students' personal projects and talents as well as their demands for quick and successful professional integration.

A similar tone, concerned and yet pugnacious, characterises the second letter.

Confronted with "the worldwide battle of intelligence", France appears once again unprepared and bewildered with its "20 per cent of students leaving the educational system without qualifications": there are too many differences among the different schools, to be truly able "to ensure for all children real equal opportunities in higher education, professional employment and, much more simply, success in their adult life."

"School takes too long to react to the difficulties faced by pupils", letting "tens of thousands of pupils accumulate failures" and reach the end of their school paths lacking the main literacies and without any qualification at all.

In June of 2008, this diagnosis was resolutely confirmed by Minister Darcos, together with the urgency to act quickly in order to interrupt what appears to be a dead-end spiral for too many young people; moreover, in his letter of introduction to the new primary school programmes[27], he stresses that their main goal, as from the next school year, is precisely "to significantly reduce [...] the alarming rate of pupils leaving primary school in a situation of recognised failure".

Which is the best formula to reverse the current trend and ensure "school success", which also means personal, social and professional success – in one word success in life?

A revitalisation of "general knowledge, as broad as possible", a rich and plural general education, which however should not be "disconnected from trades and crafts", as it would be meaningless today to set intellectual against manual labour. On the contrary, it is necessary to immediately offer all pupils "a path to discovery of the different trades and crafts" (*Lettre de mission Darcos,* 2007), which effectively completes the various routes through higher education, both shorter ones, vocational and scientific-technological directly leading to employment, and longer and more in-depth ones, preparing at the advanced level for professional careers or academic research.

Therefore, together with the indispensable customisation of learning paths, the two main tendencies – generalist tradition and professionalising topicality – both need to be strengthened and invigorated. Within them the space for documentary education – of which the two "souls" are once more intimately entwined – is obviously destined to expand.

3. Information literacy at university: plural approaches, various solutions

Starting from the Bayrou Decree, the MTU teaching unit, inspired by the modern pedagogical approaches of active learning, cognitive psychology and constructivism, includes a section specifically devoted to documentary

[27] Darcos, X. (2008).Voici les nouveaux programmes pour l'école primaire. *BOEN*, special issue n. 3, 19th June 2008. Ministère de l'Education Nationale, <http://www.education.gouv.fr/bo/2008/hs3/lettre.htm>.

methodology. Nevertheless, several IL contents – both theoretical-methodological and technical-practical – are present throughout the entire didactic unit. Therefore, knowledge, competencies and know-how precious or essential for IL are inextricably woven with others, on the whole aimed at building – in a more and more conscious and autonomous way on the students' side – a personal, scientific and professional learning path, highly individualised and successful, and at developing sophisticated cognitive processes and superior skills, such as modelling, analysis and synthesis. In short, it is certainly about "learning to use documentary resources", but above all about "developing instruments, tools, and methods essential in student work; knowing how to evaluate and manage one's own educational project; how to prepare a personal and professional project; how to better understand the way of learning, and to analyse and compare it in order to develop new competencies"[28].

Education in documentary research and methodology proper covers bibliographical research, information use, handling and management, as well as the production-communication side, i.e. to take notes, to create pieces of writing and documents, to prepare dossiers, oral and written communication, presentation techniques, and it is strictly connected with autonomous and situated learning and its techniques (putting into situation, project management, time management), progressive emancipation and global growth of students.

It means, on the students' side, to learn to draw and master their own individual paths, which links up to the PPP - Personal and Professional Project (*Projet Personnel et Professionnel*)[29]; on the teachers' side, to prefer flexibility and tutoring.

[28] These are the general objectives of the MTU unit, described by Jean-Pierre Faudé in its presentation of May 2002, *La méthodologie du travail universitaire - DEUG scientifique et technologique. Bilans et perspectives*, in which he fully exploits and maximises his experience at the SCUIO (*Service Commun Universitaire d'Information et d'Orientation et d'Aide à l'Insertion Professionnelle*) of the Paul Sabatier University, Toulouse 3.

[29] Its goal is to enable the student – actor of his/her own path and not passive and unconscious subject any longer – to reconcile his/her personal and professional ambitions with his/her real abilities and improvements in a coherent and gradual educational path. It is carried out through a continuous critical reflection, a serious self-examination, the analysis of his/her experiences compared with those of others and the analysis of the external environment. The PPP requires a huge personal investment, commitment and empowerment with regard to self-knowledge, self-awareness and documentary research, and obviously falls within the area of tutored projects. See *infra*.

According to the Bayrou Decree[30], in the first-cycle (DEUG) education in documentary research is part of a larger module and it is compulsory for nearly all universities. Predominantly basic, it essentially consists of the most generalist and transdisciplinary part, an introduction to documentary research methods, including fundamentals and basic techniques: library instruction, acquisition of the ability to identify information needs, different search modalities and tools, Internet searching, the use of keywords, rudiments of bibliographic skills and basics on disciplinary sources (CD-Rom, online databases).

As regards the second (*Licence*) and the third cycle (*Maîtrise*), the scene looks more chaotic and multifaceted, due to a lack of State legislation; however, despite the large numer of different cases, documentary education is mostly more advanced, in-depth and critical, aimed at enabling students to master disciplinary information, related tools and techniques, more specialised and complex, and it is generally the same for the two levels: thus it focuses on specialised subject information (subject databases, specialised bibliographies, economic, business and patent information, etc.), the use and evaluation of information (skill crucial first of all for advanced searches on the Internet and secondly because of rapid evolution and obsolescence of information sources).

Documentary education provided at the second cycle, as well as at the first cycle, is usually part of a broader module, but, contrary to that, is less compulsory and more optional.

In the third cycle, it tends to constitute a separate module, at times compulsory, at times optional, to an almost equivalent extent, for two easily inferable reasons: an advanced student should on one hand have already acquired and assimilated methodological foundations of research work and on the other hand be able to manage his/her educational needs in a more conscious and independent manner.

Due to the protection of the university autonomy confirmed by the Bayrou Decree, documentary education is often, but not obligatorily, entrusted to the university library; nevertheless, several faculties prefer to manage it on their own and the established forms of collaboration are very different.

Thanks to the LMD Reform – dated 2002 but slow to be accomplished – there are a constant and generalised increase of documentary education in all the three new university cycles and the clear tendency to integrate it into

[30] On whose basis university studies are organised in three cycles: the DEUG, a French diploma awarded after two years at university; the *licence* degree after 3 years and the *maîtrise* degree after 4 years.

academic *curricula*. Therefore, documentary education tends to be provided at all levels as a separate module and to assume a definite character, graded and tailored to the corresponding educational degree.

It is a compulsory module in the first and second cycle, since it is considered a key element of learning, and it predictably becomes optional in the doctoral degree, almost without exceptions.

Since the total teaching hours must remain steady within the single degree courses, only its inclusion into Ministry-authorised academic courses guarantees its time and financial stability: all this entails a complete rearrangement both at the organisational level and at the level of contents, and thus their redistribution toward a growing homogenisation and a more balanced, structured and effective harmonisation.

Documentary training mentioned by the LMD Reform is the compulsory one related to the first cycle, which contains basic IL contents, and essentially consists of an introduction to documentary research methods and related tools.

In the other two cycles disciplinary and specialised connotation of information culture increases, to which are added the expert use of information and opening up to problems decisive for research, such as the publishing system and the system of scientific communication in a broad sense.

At the master's degree level the module is compulsory too: *inter alia*, the use of the Internet, bibliographic databases, the use and writing of bibliographies are deepened.

Finally, with respect to the Doctorate degree, the optional module develops a critical approach and also regards the typological variety of scholarly publishing (e-journals, preprints, etc.), its rapid changes, the structure of scientific communication, bibliotheconomic and publishing matters essential for researchers.

The academic library is not explicitly mentioned in the Law on LMD Reform; however, the partnership between a university and its library is implied, since it is by now considered as acquired and deep rooted in a sound and widespread manner. In fact, the law provides for State financial support for documentary education – reserving specific positions for both the librarian and the teacher - due to the generalised increase in the educational offer, that is the rise in the number of activated courses and simultaneously of students attending them.

Therefore, the LMD Reform is the cause of the overall reorganisation of documentary training/education, which is now more complete, better distributed and differentiated in the three degrees.

Hence a clear trend appears: the approach of the initial semester or semesters – which is more generalist, methodological and transdisciplinary – as students progress through their studies turns more contextualised, more connoted in a disciplinary manner and more applied and specific at the same time, until it finally looks, in a sharp and critical way, at the complexity of the contemporary IS, at the most pressing issues of the information universe and scientific and scholarly publishing.

To sum up, the MTU teaching unit marks a relevant gap from traditional pedagogical practices, since it requires a significant shift in thinking and practice: indicator of innovativeness and teaching quality, it on one hand represents a significant draw for secondary school students and on other hand provides them with an effective learning support (Dubois, 2004).

The brief overview of the new national pedagogical programs (*Programmes Pédagogiques Nationaux*)[31] - which as from 2006 set up a new organisation of academic studies for the **DUT – University of Technology Diploma** (*Diplôme Universitaire de Technologie*), one of the most important French Higher Vocational Education degrees, in its 24 specialities, articulated into semesters and capitalizable teaching units – offers a substantial confirmation to these observations. All the numerous educational paths individually consist of a main section, which ensures the acquisition of core competencies, and complementary modules, leading students toward employment or further deepening of study and/or research.

Contents of traditional documentary education and of the more topical IL are to be found a little everywhere. They can be easily grouped into three main lines, to which two of minor importance are added.

The first route, common to all the specialities and transversal across all the disciplines, is the *PPP - Personal and Professional Project* which, including putting knowledge and know-how into practice, develops autonomous learning and methodological competencies necessary for the human and professional growth of students; it also supports and enhances their research and communication work by creating diversified educational paths highly individualised. The modules can be extracurricular or curricular, credit-bearing, sometimes more sometimes less characterised in a disciplinary way.

[31] Cf. http://www.enseignementsup-recherche.gouv.fr/cid20276/programmes-pedagogiques-nationaux.html.

The *tutored project*, an initiation to project management, is analogous: it is a unit of professional training which completes compulsory modules, and, according to the PPP, exploits and improves some transversal abilities – teamwork, project, synthesis and analysis, communication and presentation skills – and utilises in practice what has been learned in all the subjects taught.

The PPP and the tutored project cover, with partial overlappings, various methodological contents of scientific research in general and of IL in particular. Some skills are noteworthy: documentary research; bibliographic research and its methodology; to know how to do a subject search on a topic; how to search for subject information; how to search for information using all the available sources; how to analyse and evaluate information; while achieving a personal and professional balance, how to study, observe and explore the professional environment, the career and job opportunities; documentary research on different crafts and activities; to know how to gather and communicate information useful for employment and how to manage and use it effectively; work on documents, i.e. research, analysis, including analysis methods, study of scientific documents, writing and presentation of synthesis documents, report writing; to know how to write technical reports, synthesis reports, how to create dossiers etc.; synthesis and exploitation of collected information, oral and written communication, expression and communication techniques, effective performances, oral and written presentation of a project using appropriate communication aids.

Besides, there is a very similar domain, *otherwise learning*, which strengthens student's independent learning, leaving him/her alone with information in a guided personal work and in the use of ICTs. The following two modules refer to it: *Survey methodology*, which introduces to research in Social Sciences through methodological principles and strategies already connoted in a disciplinary way, and *ICT tools*, which includes some competencies and skills beyond the mere informatics ones, i.e. *to know how to search for information,* how to save and archive it, *how to create and present documents.*

The second main track is the so-called *general education* (scientific or for business), in which, conceiving and producing scientific and professional documents, relevance, clarity, concision, coherence, and consistency of the message are in focus. It enables students:

- to gather, select and organise multiple information from various scientific sources;
- to create technical data sheets and effective summaries starting from multiple documents;

- to select, classify and present information according to a defined task;
- to write and present synthesis working papers for professional purposes, rigorous and effective scientific papers.

In some specialities, in its formulation "general education and business knowledge", it comprises a hybrid module among languages, culture and communication, containing three clusters of contents and skills:

1. intellectual work management, in which critical analysis of documents and information searches are included;
2. writing, specifically focussed on preparing synthetic dossiers, a genuinely documentary task;
3. finally, mind openness.

The third line, strictly connected to the previous one, is the broad area of *expression and communication*, present in the majority of EU countries. In this sphere in fact, although the focus is on presentation and communication skills, more general methodological contents concerning research academic work and more specific IL contents are comprised, as regards the creation of a product or performance using new and prior information, its effective and appropriate communication[32]. Therefore, there are the basics of written and oral expression, the creation of effective scientific and professional works (papers, reports, notes, data sheets, dossiers, etc.), and also the development and improvement of essential knowledge, competencies and theoretical-methodological skills: argumentation, analysis, synthesis, general culture and language competencies.

The secondary routes, often linked to the last two and encompassed by them, mostly in Europe cover IL contents: more frequently *Informatics* (and *ICT tools*) – combined or merged in General education – which pays attention to information world, and embraces the access to European and international networks; *computerized documentary research*, i.e. the interrogation of databases, information searching through subject databases, their expert use and enrichment, the utilities for ex. for law (codes, jurisprudence), specifically focusing on Internet searches and the use of search engines.

[32] Cf. ACRL - Information Literacy Competency Standards for Higher Education – Standard Four *(The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose)* and its three performance indicators.
<http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.cfm>.

Languages (and *Foreign language, Foreign languages*) are less represented and mainly included in general education or communication modules: they cover acquisition of skills in searching for, selecting, using, organising, presenting information from heterogeneous sources, and in drawing up and presenting products or performances in different European languages (mostly in English).

3.1 University and university library: diarchy or alliance? Some concrete examples

A short survey of academic programmes less technological and specialised and, on the contrary, wider, generalist, interdisciplinary and open to Human and Social Sciences confirms the trends highlighted above.

The well grounded theoretical, broad and multidisciplinary approach of the **Grandes Écoles**[33] at the *Licence*'s degree level provides a compulsory course belonging to the first-year common trunk: rudiments of documentary research, which is a complete IL course, albeit limited to an only one semester. The programme consists of two theoretical-practical parts:

1. *Documentary research* proper, which comprises an accurate library instruction session followed by concrete examples of searches made using different devices;
2. *Preparation of dossiers*, starting from the analysis of scientific debate and exploiting databases; it includes: analysis of bibliography and comparison of the sources; information searching by interrogating online databases; drawing up of synthesis reports; presentation of critical problems and main protagonists of the topical discussion, possible sceneries, and future directions of the debate.

At more advanced levels, the offer becomes various. There is a shorter course, aimed at "leading students to realize a relevant documentary research using multiple resources (different from Google) and to give proof of their own critical thinking and synthesis skills in relation to a huge and heterogeneous information flow"; it explains how to find and locate different documents and examines searching for information on the web. It also includes the creation of dossiers on a documentary research subject through teamwork.

Within the informatics area there is the longest and best structured course,

[33] which combines the solid scientific background with practical training, a permanent connection to the labour market, and multiple steady links to real life, industry and business. The following examples have been drawn from the programmes of the Ecoles des Mines de Paris <http://www.ensmp.fr> and de Saint-Etienne <http://www.emse.fr>.

Information organisation and search, part of a larger and complex theoretical-practical module, "Information", entirely devoted to information handling and management. The course delves into information searching issues, its models and the different information search systems. Theoretical-methodological lectures are integrated with work with scientific articles and practical use of information retrieval systems.

The wide universe of **studies in literatures, languages and human sciences** gives other confirmations.

In the first cycle (*Licence*) in Literatures and languages the first semester of the common trunk comprises a compulsory credit bearing course, which significantly associates *Documentary research and PPP.*

Many theoretical cues, techniques and strategies of documentary research are included in the PPP unit; conversely, the didactic unit devoted to documentary research aims at developing and enhancing student autonomous learning and emancipation, in a harmonious integration of university library and classroom. Students are helped to develop personal search strategies by using concepts and managing devices.

Similarly, again in the first-cycle (L), the PPP unit gives ample room to IL since it covers library instruction, documentary research work and its analysis, preparation of individual written reports, presentation of the results of one's own researches (oral in groups, with a collective discussion on the experience).

At the upper level, in the professional Master's degree IL contents concentrate in a teaching unit, in which documentary research is aimed at achieving more concrete outcomes, to be used immediately; then they are encopassed, once again, in the indispensable language competencies, within a larger theoretical-methodological perspective. For example, in the linguistics area – speciality: complementary informatics competencies – the second semester contains a compulsory credit bearing teaching unit, *Culture and society*, including the development of a documentary approach in finding and locating information sources and places; and it requires students to accomplish individual and collective I&D works: quick information cards, dossiers, gathering journal titles and collections, preparing documentary funds on CD-Rom, etc. It is a sign that this education - in its double nature, theoretical and practical – is considered highly professionalising with a direct and significant impact on learners' employment prospects.

As regards the research Master's degree, in the field of languages and intercultural issues there are two types of courses:

1. *Methodology*, which examines the different methodological aspects of research work (documentation, writing, presentation, together with the main theoretical approaches),
2. *English for research*, on English used in research (writing for research purposes, syntheses of papers, oral presentations, debates, etc.).

Specific cases, exemplary both from a positive and a negative point of view, are reviewed below: the pioneer experience of Paris VIII, started in 1984, and the three case studies proposed in 2004 (Dubois, 2004), which clearly show, in the short and middle distance, the impact of LMD Reform on documentary education, in different, particular situations.

Documentary education in the first years of university studies, early introduced at **Paris VIII**, is based on a course design developed by the Paris Urfist and from the beginning is an exemplary collective product: in fact, the academic library, the documentation department, and several disciplinary teachers participate in it. Actually, it is not only a training course in documentary research *stricto sensu*, but also a true education concerned with intellectual work, starting from the process of information search and acquisition. Its objectives focus on student's progressive emancipation, his/her acquiring of autonomy necessary to perform university work: therefore, to know how to use documentary resources is comprised, but there are also to be able to master reading, to improve memory, to organise work.

From various surveys – both qualitative and quantitative – conducted from 1993 until 1997-98, it definitely appears that these teaching programmes contribute to *intellectual affiliation* of students, familiarising them with the deep mechanisms of HE, its codes, practices and rules, and thus effectively fighting against the failure and drop out rates of the first academic years (Coulon, 1996, 1999).

In some universities – such as the multidisciplinary **Picardie University**[34] – the carrying out of the LMD Reform is slow and difficult. The SCD continues to provide training courses in a discontinuous, unsystematic and extracurricular way for the three degrees (L-M-D), and training is aimed at teachers too. The major problems – shared by several universities – are the work overload due to the large number of students, and the increasingly marginal role of the SCD because of the overall delay in implementing the reform.

[34] Cf. http://www.u-picardie.fr/.

Examining the library and university web sites – both updated 2007 – in the different disciplinary fields, at the Bachelor's level (L), many credit bearing courses contain significant IL contents with a mainly methodological perspective: Subject methodology and ICTs (also including subject databases and Internet sources); Expression techniques; Methodology of university work, Methodology, Introduction to methodology, Methods of university work, Introduction to devices and resources, Methodological devices; Methodology for the Bachelor's thesis; Bibliographic research; Methodology and research, Research methodology. Moreover, the historical-geographical sector embraces methodological courses highly connoted from a disciplinary point of view, focussed on the analysis and study of geographical and historical documents; to them are added courses centred upon demographic sources, much characterised in sociological and ethnological terms, and other specialised courses on critical analysis of documents and archives.

At the Master's degree level methodological education, absent from professional programmes, concentrates in research ones. There are several credit bearing courses too, which encompass various IL contents: Basics of research; Methodology, ICT tools, Expression and documentation techniques; the specialisation in the historical-geographical area remains, with ICT tools for historians.

In other universities – such as Paris III and Paris V – the collaboration with the library is ancient and steady.

Since 1998 **Paris III**[35], a university of Arts, Humanities and Social Sciences, has established a solid partnership with its library.

Already in 2004, the first cycle embraces compulsory training programmes in documentary research, including some IL fundamentals. They are based on the close collaboration between a trainer documentalist, who describes the tools for research and how to use them, and a teacher, who gives meaning to them, by explaining their use from a properly subject and academic point of view.

Documentary education of the second and third cycle is not compulsory, but highly recommended by the directors of Master's degree programmes and Doctoral Schools. As the LMD Reform is being implemented, it is better structured, differing among the three levels in a precise and graduated way.

[35] Cf. http://www.univ-paris3.fr/.

The growing trend to integrate documentary education into the MTU unit has appeared since 2004, with a consequent considerable increase in teaching hours and greater importance of the SCD.

The collaboration between the university and the academic library has intensified more and more, extending far beyond its initial narrow boundaries; besides, new types of training programmes have been tested, in which students have undertaken the role of trainers and have been compensated in ECTS credits.

As it appears on its website, the university provides, at the Bacherlor's degree level (L), different credit bearing courses with documentation contents, mainly of methodological nature, but already connoted in a disciplinary way: Methodology in studies of literatures and cultures and documentary research, Methodology of university work in language sciences; Education in documentary research. The research Master's degree programme comprises, among the credit bearing teaching units, Methodology and bibliography, Research tools, Introduction to research methods.

Finally, at **Paris V**, a multidisciplinary university too, since 2004 the SCD has provided documentary training sessions differentiated into the three levels and across the subject areas.

In February 2003, the MAGIST Project - Mastering Access to and Managing Scientific and Technical Information (*Maîtriser l'Accès et Gérer son Information Scientifique et Technique*) started: it is a "transversal project"[36], which, exploiting the LMD Reform and thanks to a strong collaboration with the Urfist, is aimed at including documentary education into the university *curricula*.

In 2004 the main problem was still the complete integration of documentary training into subject courses: in fact, teachers neglected it, because they were often not very knowledgeable about documentation techniques and the subject was not much focused on in their teaching careers.

As for librarians, though they joined the forces of SCD and Urfist, they had to train too many students; in order to meet the demand, they trained a growing number of trainer students, whom they entrusted with the training of other students, an activity which is rewarded with credits.

In the following years, the amount of work and efforts made by the SCD has increased: the library has provided courses at the three different levels for

[36] Université René Descartes - Paris V. Service Commun de la Documentation, *Rapport d'activité 2005*. pp. 11-13 <http://www.bu.univ-paris5.fr/IMG/pdf/Rap_activite_SCD_2005-3.pdf>.

students, trainers, teachers and professionals (especially for health professionals and school psychologists), in several subject study areas, chiefly in law and business, economics and management, psychology, health and biomedical sciences, human and social sciences. The main strands in which documentary education - either more basic and generalist or more methodological and specialised in disciplinary terms - is included are: library instruction enhanced with hints of IL; documentation, research and documentary methodology; English, communication and informatics.

The SCD website[37] offers a comprehensive overview of the documentary training programmes carried out during the academic year 2007-2008: equally distributed throughout the three levels and often aimed at the tutors too, they concentrate in the biomedical field and in the health sciences, but don't lack in law, human and social sciences, psychology, mathematics and computer science areas.

3.2 An emblematic product of the new university: IPInfo, an active and collaborative learning platform in the service of IL

IPInfo[38] is an information and communication system aimed at improving IL, developed between 2000 and 2004 by an academic team including experts in cognitive psychology, computer science, information and communication sciences (the project leader)[39]; on the contrary, the university library and its professionals have been absent.

It is a really versatile pedagogical intranet, which performs many key functions from scientific, educational and professional perspectives: project management, cooperative work, knowledge sharing, reference management, e-learning.

Its inspiring pedagogy is founded on four main issues:

1. a project pedagogy (individual and collective);

[37] http://www.bu.univ-paris5.fr/spip.php?article664.

[38] Cf. the related website, <http://spip.univ-poitiers.fr/ipinfo/ipinfo/>, and the pithy article of the project authors, Deshoullières, B., Moreau, S., Djoudi, M., & Dinet, J. (2004). IPinfo, un système d'information et de communication pour les formations à la maîtrise de l'information. *Revue STICEF (Revue Sciences et Techniques de l'Information et de la Communication pour l'Éducation et la Formation), 11*, freely available online at http://sticef.univ-lemans.fr/num/vol2004/deshoullieres-01/sticef_2004_deshoullieres_01.htm.

[39] The project leader belongs to the University of Bordeaux III, the other members to the University of Poitiers.

2. an integral approach to information and documentary research competencies (including the major steps of the entire process, from the analysis of information needs to information searching, management and use);
3. a communication logic;
4. a metacognitive learning approach, in view of its development in a more and more conscious, critical, and autonomous manner.

In other words, the main trends in the French university system concerning IL are perfectly reflected in it: a solid theoretical-methodological foundation, the breadth of the view, an updated educational and didactic approach, which tightly connects IL to active pedagogies "(case studies, problem solving, management and driving of individual or group projects...)"[40] instead of traditional ones. It implies a favoured relation to cognitivism and constructivism, i.e. to dynamic, heuristic-exploratory cognitive processes, to learner-based learning, that is active, collaborative, constructive, experiential, situated, intentional and reflective-metacognitive.

Finally, it is worth pointing out the shared effort to integrate IL into the university *curricula* also by choosing the projects in which to engage students, in close connection with subjects of their interest.

4. The other pole: the university library, the documentary context and its protagonists

The library universe was early entrusted with crucial responsibilities and educational functions in I&D: thanks to the proactive commitment and sensitivity of several institutional bodies and think tanks[41], educational programmes have been increasingly designed and tested, in order to fill a cognitive and methodological gap perceived as more and more serious in the current IS.

In the 1970s it was mostly a matter of library – bibliographic – instruction, which only a few privileged people, the "happy few", enjoyed, that is advanced university students who could take advantage of pilot courses.

[40] See the article cited in n. 38, p. 3.

[41] The Conference of the Grandes Ecoles and its Groupe de Recherche Pédagogique and Groupe Formation à l'usage de l'Information; the BNIST together with its Groupe de réflexion "Formation des utilisateurs-étudiants de l'enseignement supérieur" and the MIDIST; the SDBD e the URFIST network, etc. See *supra*, the chapter *The political-institutional context: A brief historical outline.*

The 1980s represent the so called "pioneer time"[42], marked by extensive and heterogeneous experimentation and generalised improvement.

In the 1990s expanding experimentation and gradual institutionalisation of user training fostered its massive spread (Chevillotte, 2003, 2005).

Since the millennium divide was overcome, the change has been characterised by consciousness-raising at each level: there have been not only the definitive overcoming of the narrow limits of *library instruction* and *user education/user training* in favour of more complete and topical *information literacy*, and, thanks above all to the MTU inclusion in the university studies, a fully documentary dimension – wide-ranging, scientific and methodological – of this education; but also its growing integration into academic *curricula* and a clear trend towards comprehensive standardisation and homogenisation of training programmes, methods, principles and criteria for evaluation of acquired competencies.

All this definitely seems to open the road to a forthcoming recognition by the State, which implies the setting up of an autonomous discipline statute and of comprehensive and organic framework, standards and guidelines.

4.1 The three levels

The rigorously tripartite structure of the LIS bodies, which are entrusted with the mission to organise, deliver, promote and spread documentary training and IL in their multiple modulations (single libraries-information and documentation centres, regional units, ministerial organs, professional associations), hinges on the political-institutional centralism of the French State, emphatically hierarchical, and it is punctiliously regulated by the public power.

Starting from the bottom, at the level of single universities there are the academic libraries, which from 1991 merged into the SCD – Joint Documentation Services (*Services Communs de Documentation*)[43], in which the term "documentation" is highlighted not by chance. Placed inside university, they represent the concrete and operational front-line, which daily *delivers* documentary training, a task, indeed, which has been explicitly and repeatedly assigned to them by the rules and regulations in force. However, academic

[42] Cf.: Bretelle-Desmazières, D., Coulon, A., & Poitevin, C. (1999). *Apprendre à s'informer: une nécessité - Evaluation des formations à l'usage de l'information dans les universités et grandes écoles françaises.* Paris: Université de Paris 8. Lab. de Recherches Ethnométhodologiques.

[43] which also encompass more specialised units, such as research laboratory libraries.

library is embedded within a network of relations, responsibilities, institutional and operational tasks not easy at all. Even in the variety of specific situations, the SCD fundamentally lies between university, the competent institution with its high degree of autonomy guaranteed by law, and the central authority of the Ministry of Higher Education, in particular the SDBD.

The URFIST network, born in 1982 and co-ordinated by the SDBD, is fundamental at the regional level. Nowadays they are seven, distributed in important centres – Bordeaux, Lyon, Nice, Paris, Rennes, Strasbourg, Toulouse – and mostly located within the respective universities.

The native function of the URFIST – training of librarians, university teachers and postgraduates in using STI and the development of their awareness about NICTs (New Information and Communication Technologies) – has evolved over time, changing and multiplying in order to cope with the new IS challenges.

At the organisational level, each URFIST consists of a nucleus comprising a researcher teacher and a librarian, and the success of such a model continues to inspire the teams – each composed by a researcher teacher and a documentalist-librarian – present in the most active SCDs and whose generalisation so many times has been proposed and supported for university and school libraries.

Besides, the link to the SCDs – whose directors are much present in the URFIST organisational cadres – is very strong.

As appears from the *Outline of the activities of the URFIST network for the years 2004-2005*[44], the seven URFIST, notwithstanding the marked heterogeneity and the different specialisations of each of them, are entrusted with the following tasks:

- training of trainers, including the creation of *ad hoc* training modules targeted at HE trainers/educators (researchers, researcher teachers, information professionals, CIES[45] instructors);
- as the third pillar next to university and SCD, a crucial role of counselling, coaching and support, in order to foster the introduction of STI training modules into academic *curricula*;
- the creation of multimedia pedagogical supports and tools;

[44] Freely available on the web at
http://www.sup.adc.education.fr/Bib/Info/Format/Urfist/presur/Synthese2004-2005.pdf.

[45] The CIES *(Centres d'Initiation à l'Enseignement Supérieur)* are precisely aimed at training for researcher-teacher profession.

- a function of scientific and research intelligence, which, focusing its constant monitoring on NICTs and digital documentation, is essentially a function of technological and documentary intelligence.

From a brief overview of the main topics of their educational activities in the 2004-2005 period, three fundamental lines can be identified.

1. IL proper, of advanced and specialised level, offering an accurate general view or highly connoted in a pedagogical manner for trainers' training: a strand embraces information searching and general methodology of documentary research, its tools, methods and main evolutionary paths, particularly focusing on information searching on the Internet; a second cluster is centred upon information evaluation and validation and impact factors; a third one upon information sources and subject resources, with special reference to databases, the Internet, specialised and subject search engines, including the presentation of the resources of major service providers to documentalists/information professionals; lastly, a fourth domain covers the more properly educational problems of IL (pedagogical trends, didactic methodologies and devices, engineering, contents).
2. IL and documentation themes, or anyhow very contiguous, theoretical-practical of high specialisation; they constitute the core of URFIST's expertise, representing the most current problems and forefront issues: a branch comprises information processing, handling, management, analysis, indexing and cartography and related tools (semantic web, ontologies, heuristic maps, scientometry); another track is entirely devoted to information law and intellectual property, their controversial problematics and devices, including copyright, plagiarism, peer-to-peer approach; finally, a third group explores the most topical challenges of scientific publishing and open access.
3. Issues highly specialised in the area of documentation and bibliotheconomy, with hybrid contents, which in some measure altered the genuine approach of URFIST, contaminating it with more properly technological aspects (ICTs): open archives, digital libraries, e-journals and content management systems are the most interesting ones.

On the basis of surveys conducted on training programmes delivered by the URFIST and of related official statistics, from 1999 until 2005 there were some constant trends: among the targeted groups, the total of LIS professionals considerably increased; in parallel, the number of university

students dramatically decreased and the number of researcher teachers remained essentially stable (showing a very slight increase), while staff of the local communities and high school teachers became much more numerous.

After all, in addition to openness to the territory and secondary education, a clear tendency to focus on the training of trainers and to gradually give up training programmes for university students is noteworthy. Also the students who participate in training courses provided by the URFIST are actually trainers: they in fact, pursuing a Master's or mostly a Doctoral degree, are those whom universities entrust with the documentary training of freshmen, within the MTU framework.

Furthermore, the URFIST network, concentrating its training activities more and more on LIS professionals, is progressively strengthening its relations with its favoured interlocutors, i.e. the SCDs. And, in this context, it increasingly commits itself to arranging pedagogical and didactic tools and support intended both for SCD and for end-users.

Finally, at the national level, two protagonists are identified, one institutional and the other professional: the SDBD and the ENSSIB.

The SDBD - Sub-Division of Libraries and Documentation (*Sous-Direction des Bibliothèques et de la Documentation*) is an organ of the Ministry of Higher Education and Research; the order of 7th September 2000 clarified that the SDBD "defines the policy of vocational, initial and in-job training, and coordinates user training activities in search and manipulation of scientific and technical information". In order to fulfill that mission, the SDBD, in close relation with the Office of Education, Publishing and Information Systems - in charge of overseeing "activities concerning IL, educational documents and distance learning" -, co-ordinates its activities with the SCDs and the URFIST network (Chevillotte & Noël, 2003).

The ENSSIB - The National School of Library and Information Sciences (*École nationale supérieure des sciences de l'information et des bibliothèques*)[46] was established on the initiative of the same Ministry in 1992 in order to train librarians and documentalists for State and territorial communities and the cadres of documentation and STI services, and to develop and improve research in the LIS field.

For quite a while, basic training for librarians has included at least 1 day of lectures on IL and the ENSSIB has provided an optional credit-bearing 24-hour

[46] Cf.: http://www.enssib.fr/.

pedagogical training course since 2001. However, since 2007 LIS students have attended at least a 2-day course on IL and have been able to choose an optional course on training (Chevillotte, 2005; UNESCO France, 2007).

In particular, at present the ENSSIB is planning an articulation within the *curriculum* which explicitly re-proposes the tripartition suggested by Kajberg and Lørring in 2005[47]: the ENSSIB *curriculum* provides all students with an introductory general course on IL (lasting 12 hours), in the form of the traditional lecture, containing the illustration of IL concept, its main models and an essential bibliography, and enabling them "to become information literate themselves"; it also offers an optional course "training the trainers" (lasting 30 hours) which, providing LIS students with key didactic elements to teach IL effectively, includes case studies, more active learning, a practical rather than theoretical approach.

Thus, competencies deemed necessary for teaching IL successfully are a combination of educational and information skills, competencies and knowledge: IR and information seeking skills, pedagogical competencies, communication skills and minimum competencies in the subject area[48].

Besides, further education, on-the-job training, vocational training and professional development for LIS professionals – both at the national level (ENSSIB, FORMIST) and at the regional and local level (URFIST) – for quite a long time has encopassed "training the trainers courses", containing specific IL modules.

Within the ENSSIB in 1997 the FORMIST - Training in Scientific and Technical Information (*FORMation à l'Information Scientifique et Technique*)[49] was set up on the initiative of the SDBD; its major missions are to collect and disseminate on its website pedagogical resources on IL mainly produced by the different SCDs and URFIST, as well as best practices, information and recommendations, and to promote the exchange of experiences among the IL trainers.

[47] Kajberg, L., & Lørring, L. (Eds.). (2005). *European curriculum reflections on library and information science education.* Copenhagen: Royal School of Library and Information Science: "Library and information professionals have a special role in the process in which people become information literate. Thus they have to learn to do this effectively. It is essential for LIS students: a- to be aware of IL as a concept; b- to become information literate themselves; c- to learn about some key aspects of teaching IL". (Quoted by Chevillotte, S. *Competencies and curriculum for Information Literacy.* Milano, 16th March 2007 <https://dspace-unipr.cilea.it/bitstream/1889/529/1/Chevillotte.pdf>).

[48] Cf.: Chevillotte, S. (2007). *Competencies and curriculum for Information Literacy.* Milano, 16th March 2007 <https://dspace-unipr.cilea.it/bitstream/1889/529/1/Chevillotte.pdf>.

[49] Cf. http://formist.enssib.fr/.

More precisely, the functions of the FORMIST can be summarised as follows:

- documentary monitoring;
- providing help and support to authors in producing and distributing educational materials;
- creating training programmes for IL instructors in collaboration with the ENSSIB;
- training the trainers, i.e. pedagogical training for LIS professionals, first aimed at user training/user education and subsequently at IL;
- co-ordinating the network of IL trainers.

Its essential tool is the website, inaugurated in 1999 and considerably evolved in the course of time. At the present time the macro-areas are three: "Themes", "Disciplines" and "Type of documents".

"Themes" embraces a range of various topics related to information: beside the specific section devoted to IL *(Former à la maîtrise de l'information)*, information analysis, its use, handling, management and processing, its searching, its production and dissemination, general features, sources and resources, information technologies.

The "Disciplines" are Law, Economics and management, Literatures and human sciences, Health and Sciences.

"Type of documents" organises documents on the basis of their different typologies; thus there are *News and current events*, containing notice of significant events, such as seminars and courses, *Courses* (including various methods, educational paths, tutorials, self-evaluation, etc.), *Educational papers, Tools and resources* (glossaries, bibliographies, portals, websites, etc.), *Scientific publications.*

Documentary research and IL are the fundamental subjects, on which resources and documents are offered after an accurate selection process.

It is mainly targeted at students attending IL courses or self-training sessions, and IL trainers – teachers, librarians-documentalists, or PhD students – who can use the FORMIST in creating courses and in order to update their own competencies, to confront themeselves with each other and to exchange and share their viewpoints and experiences.

The FORMIST plays a significant role as a network chiefly through the FORMIST Meetings (*les Rencontres Formist)*[50], an annual appointment since

[50] Cf. http://formist.enssib.fr/rubrique.php3?id_rubrique=4.

2001: open to French people as well as to all European people, they are primarily of use to instructors/trainers, in order to exchange competencies and opinions, to share and discuss knowledge, expertise and different perspectives, to participate in think tanks, to contribute to the website.

The second cornerstone of the network was the blog[51], which was closed in a short time, since it had been active only for two years, from October 2004 to October 2006.

As vanguard within the horizon of modern pedagogy based on collective intelligence and situated and collaborative learning[52], at the national level, though hosted on the site of the Urfist of Toulouse, there is also the FoRSIC – Training and Research in Information and Communication Sciences (*Formation et Recherche en Sciences de l'Information et de la Communication*)[53], a portal devoted to education in documentary research, user training in IR, information searching and management. It is a cooperative platform firstly targeted at trainers, who thus can freely exchange knowledge, competencies, experiences and resources.

To sum up, its main objectives are:

- to achieve a professional and pedagogical *référentiel* for trainers;
- to manage their competencies and the pedagogical resources which they create and use;
- to create an inventory of the preferred information sources;
- to propose to the community an evolutionary representation of its knowledge;
- to enable students to access freely educational programmes and resources.

In order to build a vital community of practice and to keep it active, a multidimensional index and an ontology were created, through which it is possible:

- to look for and identify the trainers and their knowledge, competencies and skills, organised through trees of knowledge;
- to find documentary sources and training resources created by each of them;
- to widen knowledge, to develop new pedagogical resources and disseminate them;
- to identify the needs according to the different social contexts[54].

[51] Cf. http://blogformist.enssib.fr/.

[52] according to the cognitive educational model of Pierre Lévy.

[53] Cf. http://www.urfist.cict.fr/forsic/.

[54] Cf.: Link-Pezet, J., & Ertzscheid, O. (2003). Reflections on information literacy, information retrieval

4.2 University libraries and faculties at work together: the products

Information literacy for students: a guide for trainers
Created between 1998 and 2000 by a team including librarians and teachers, it is intended for supporting trainers in the implementation of their teaching programmes. It provides recommendations and practical suggestions and tools concerning:

- The design of the programme: IL – meant in a broad sense – covers traditional documentary research, the initial exploration of a topic, the use, handling and management of information;
- Which pedagogical methods should be preferred: work in small groups, project learning, and its embedding in the discipline (Chevillotte & Noël, 2003; Panijel, 2005).

Diliweb – The shortest way to the Net[55]
It is a national pedagogical project carried out within university, by IT experts - university students and teachers - at the University of Le Havre, together with librarians and a teacher of Documentation at the same university, with the cooperation of the Ministry of Research, the SDBD and the Formist.

It is an online platform intended for the French-speaking university community in order to facilitate the use of the Internet within academic courses. Characterised by a high interactivity, it has a modular structure and a double purpose: to illustrate the Internet (an overview of the Net, its origins and technologies, the major current topical debates about economic and social issues); to teach how to search for information on the Net, how to write and publish webpages to be shared in the global net.

CERISE – Suggestions for students to conduct specialised and effective information searches[56]
Conceived within the MTU as from 1999, it was initially designed for humanities and social sciences students at the first-cycle level, but is easily adaptable to university students of scientific disciplines. Born as a favoured tool of MTU teachers and largely utilised by them, it is also a useful self-training

and training. In C. Basili (Ed.), *Information Literacy in Europe: a first insight into the state of the art of Information Literacy in the European Union* (pp. 88-103). Rome: CNR - National Research Council.

[55] Cf. http://www-lih.univ-lehavre.fr/~prevost/Diliweb/.

[56] Cf. http://urfist.enc.sorbonne.fr/cerise/index.htm.

tool for all who search for information for personal and professional purposes. It is the result of the collaboration between teachers and librarians and consists of a guide, freely available online, which introduces to the methodologies of documentary research and to IL.

Beyond library and bibliography handbooks, it draws an intellectual, scientific-methodological path, providing the tools both to accomplish the cognitive objectives and to establish the evaluation criteria.

Also the very recent "Cerise Histoire"[57], a methodological guide for students pursuing a Master's degree in Medieval History, belongs to the Humanities. It deepens the documentation and IL topics from a disciplinary perspective, encroaching on the territory of history and sciences of the document, jealously defended and monopolised by historians.

PRAXISTE – To be able to search for excellent scientific, technical, economic information autonomously. Discovering scientific, technical and economic information
SAPRISTI! – Access paths and tracks to search for scientific and technical information on the Internet
PRAXISTE[58] and SAPRISTI![59] exclusively originated in the library world.

The former is a device for self-training in methodology of searching for scientific, technical and economic information, developed by the Libraries of the INSA (*Institut National des Sciences Appliquées*) of Lyon (Doc'Insa) and of the Technology University of Compiègne, and designed for Engineering students at the third-cycle level. The multimedia and interactive website proposes modular contents, a self-assessement tool and distance tutoring.

The latter was created in 1996[60] by the Doc'Insa of Lyon and is still managed by information professionals working in these Libraries. After verifying their quality and reliability and organising the different documentary typologies, it collects more than 500 websites on engineering sciences; moreover, it proposes a methodology of Internet searching and some helpful hints for validating information from the Internet, including an *ad hoc* evaluation grid.

[57] Cf. http://urfist.enc.sorbonne.fr/Cerise_histoire/index.html.
[58] Cf. http://134.214.81.35/praxis/Pages/Sequence1/Pages/1_0.htm.
[59] Cf. http://docinsa.insa-lyon.fr/sapristi/index.php.
[60] Born in 1996 as a support for training sessions in information searching on the Internet designed for doctoral students, university teachers and researchers at the INSA of Lyon, became a specialised guide and a self-training tool, progressively aiming at a larger public.

4.3 A first assessment

From this short survey, the key role played by the academic libraries in documentary training is evident, especially, but not only, within the MTU. It appears capable of initiative and originality, and, in consequence of the LMD Reform, is being characterised more and more clearly.

Some main trends have been strengthening since 2002, the day after the LMD Reform.

- As happens in the remainder of Europe, training is modular, and tends more and more to develop as an autonomous module, especially in the third cycle.
- Collaboration and thus a certain complementarity of points of view and functions between librarians and teachers now is a fact, both at a theoretical and at a practical level: the methodological-generalist approach of librarians matches with the rigorously disciplinary approach of teachers so to speak in a specular manner.
- The LMD Reform produced a constant and generalised increase in training activities – according to the growing number of students attending the courses – and the striking shift from episodic and extracurricular training sessions to programmes integrated into the academic offer. Therefore, documentary education was radically rethought and comprehensively restructured and now it appears better distributed, more diversified among the three levels and then more complete and harmoniously targeted.

5. Certification trials at university: yet more ICTs?

The last important sector of university activities at least partially crossed by IL is the certification area, and in particular the C2i certificate - IT and Internet proficiency certificate.

It was introduced in 2002 in the wake of the certification system for primary and secondary education, the B2i certificate[61]. The C2i certificate represents its coherent continuation, with the express purpose to strengthen, improve and validate the mastery of ICT and Internet skills in HE.

As happens for the B2i, this certification adds some key information competencies to the core set of ICT skills. The characteristic combination of

[61] See *infra*, the par. *Towards a portfolio of I&D competencies?*

IL and ICTs – common to the B2i and the C2i – is not very usual in France, where documentation and related education enjoy a solid autonomy, prestigious and undisputed. In fact, differently from what happened and still happens in the majority of Europe, for documentation and documentary education there has never been any need for hybrid contamination, i.e. to join the ICTs, so to speak by infiltrating and hiding there, in order to acquire their own space and to see recognised their role and disciplinary statute.

Besides, the growing integration of documentary education as an essential part of the courses into the privileged sphere of the MTU probably reduced demands for certification of information skills and competencies at academic level.

As regards the B2i and C2i certificates, three determinant factors contributed to facilitating the strategic association of Information Technologies, Internet e IL skills: the expansion of the Information Society[62], the continuing evolution of ICTs, and the pervasiveness of the Net.

In other words, once again the nexus between *ICTs* (and *computer science, informatics*) and *IL* - recurring so many times in Europe - is re-proposed, which is facilitated and even promoted by the hybrid nature of the Internet, a refined technological tool and at the same time a huge mine of information, and a training-ground for the most sophisticated searching skills.

The C2i is structured on two levels.

The first level[63] – the oldest dated 2002[64] – is intended for students at the beginning of their academic career and must be achieved within the Bachelor's degree (*Licence*)[65]. Distinguished by a more generalist and transdisciplinary approach, it includes some competencies and skills essential for academic and professional purposes.

Among them, together with the ICT skills, there are the abilities to search for, create, use, handle and manage information; to collect, process and manage data; to produce results; some basic presentation and communication skills.

[62] In the circular n. 2002-106 – which introduced the certificate – the title of the first paragraph, illustrating the context and the genesis of the initiative, is not by chance "Studying in the Information Society".

[63] Cf. http://www2.c2i.education.fr/sections/c2i1/.

[64] Circular n. 2002-106 of 30th April 2002, published in the *BOEN*, n. 19, 9th May 2002: Enseignement supérieur, recherche et technologie - Nouvelles technologies. *Bulletin officiel de l'éducation nationale, 19* <http://www.education.gouv.fr/botexte/bo020409/MENT0201078C.htm>.

[65] Due to the fundamental importance of the required knowledge and competencies, it is undoubtedly preferable to obtain it at the very beginning of university studies.

On the contrary, the second level encompasses more advanced, sophisticated and specialised skills and competencies, and is characterised by a less generalist perspective, more discipline- and profession-oriented. It must be obtained at the Master's degree level (*Master*). Strongly focused on vocational and pre-vocational education and the job market, considerably differentiates its contents according to the diverse subject fields and the various professional needs of the target groups. It has been introduced since 2004. Until now there are six different typologies.

First of all, the "C2i level 2 for teachers"[66], introduced in March 2004[67], is aimed at all teachers of all disciplines. It is centred upon the ICT skills, emphasising the use of ICTs for pedagogical purposes and the effects and implications of the digital revolution in the educational context.

The "C2i level 2" for Law and Health Sciences students, however, is a quite different matter, since both these professional sectors are more and more characterised by the exponential growth of available information and resources. Moreover, for both of them it is vital to be able to extricate oneself in the enormous quantity of sources and to know how to effectively search for relevant, reliable and up-to-date information.

The "C2i level 2 for Law jobs and careers"[68], introduced in June 2004[69], is targeted at all the Law students. It aims at supporting and promoting their entry into the labour market, thanks to the acquisition of a wide range of useable skills and competencies crucial for Law. Much space is given to the culture of information; in particular, the broad set of documentation and information competencies includes the expert use of the numerous subject tools and resources, such as "online juridical databases, regulation databases, documentary databases; search engines for law; online journals, electronic encyclopedias, and juridical sites".

The "C2i level 2 for Health professions and careers",[70] whose experimentation started in academic year 2006-2007, was introduced in

[66] Cf. http://www2.c2i.education.fr/sections/c2i2e/.

[67] Circular n. 2004-46 of 2nd March 2004, published in the *BOEN*, n. 11, 11th March 2004: Enseignement supérieur, recherche et technologie - IUFM. *Bulletin officiel de l'éducation nationale, 11* <http://www.education.gouv.fr/bo/2004/11/MENT0400410C.htm>.

[68] Cf. http://www2.c2i.education.fr/sections/c2i2md/.

[69] Circular n. 2004-090 of 9th June 2004, published in the *BOEN*, n. 24, 17th June 2004: Enseignement supérieur, recherche et technologie. *Bulletin officiel de l'éducation nationale, 24* <http://www.education.gouv.fr/bo/2004/24/MENT0401199C.htm>.

[70] Cf. http://www2.c2i.education.fr/sections/c2i2ms/.

2005[71] and is designed for the Health Sciences (Medicine, Pharmacy, Dentistry) students. The national *référentiel* contains a rich section devoted to information management, health information searching, and to the search for and use of specialised resources.

The "C2i level 2 for Engineering jobs, professions and careers"[72] was introduced in December 2007[73] and is intended for the Engineering students, in all the different specialities. Still in process of completion, it aims at validating skills and competencies essential for the professional activities of future engineers. Notwithstanding the strong emphasis on the IT component, it also requires competencies in information handling and management, information searching, use and evaluation, with special respect to scientific and technological databases.

Finally, the "C2i level 2 for Environment and Sustainable Development jobs and careers", announced in December 2007, was set up in March 2008[74]. It is still under development and testing. The national *référentiel* includes methodological competencies related to documentary reserch and IL, ranging from searching for and managing information to reproducing and disseminating knowledge.

6. The comprehensive picture: general trends and some critical remarks

In the first cycle, documentary education - basic and generalist - entails the first contact with the information and documentation places – *in primis* the SCDs – and the documentation tools; nevertheless, it goes beyond the mere library instruction, since it mainly consists of an introduction to the methodology of information searching and documentary research, broadly speaking, and raises awareness and heightens sensitivity towards the main issues of IS (Colas, 1999).

[71] Circular n. 2005-121 of 27th July 2005, published in the *BOEN*, n. 31, 1st September 2005: Enseignement supérieur, recherche et technologie. *Bulletin officiel de l'éducation nationale, 31* <http://www.education.gouv.fr/bo/2005/31/MENT0501583C.htm>.

[72] Cf. http://www2.c2i.education.fr/sections/c2i2mi/.

[73] Circular n. 2007-1010 of 21st December 2007, published in the *BOEN*, n. 1, 3rd January 2008: Enseignement supérieur, recherche et technologie. *Bulletin officiel de l'éducation nationale, 1* <http://www.education.gouv.fr/bo/2008/1/ESRT0700244C.htm>.

[74] Circular n. 2008-1006 of 6th March 2008, published in the *BOEN*, n. 11, 13th March 2008: Enseignement supérieur, recherche et technologie. *Bulletin officiel de l'éducation nationale, 11* <http://www.education.gouv.fr/bo/2008/11/ESRT0800062C.htm>.

To quote Alain Coulon (1996, 1999)[75], during the years education in documentary methodology in the first cycle has become almost everywhere "a tool" par excellence "for intellectual affiliation", decisive to facilitate and promote the complete passage of university freshmen from the more passive and guided condition of high school students to the more mature and conscious level of HE students, distinguished by a high degree of autonomy.

The significant failure and drop-out rate in the first years of academic studies, in fact, indicates freshmen's serious difficulties in adapting themselves to the HE codes, that is to say in becoming competent from a university point of view.

From the on-site surveys and from more than twenty years of experience it has resulted that the key to success exactly lies in the process which enables the new enrolled students to rapidly discover and master the deep mechanisms, the hidden structures, the not written rules, dissimulated in the university practices[76], adapting their own *habitus* to the new norms and the new world.

In a word, the student "who affiliates himself succeeds".

Education in documentary methodology plays an essential role exactly in the "pedagogy of affiliation", able to convey "the rules of intellectual work" to the new student. The key aspects of this teaching – technical-practical and symbolic – are both involved in the "praticalité des règles" of intellectual work, and thus documentary education represents an indispensable step in order to learn "the profession of student". Training programmes in documentary methodology, in fact, though in the variety of their types and outcomes, set themselves ambitious goals; hence, in order to acquire autonomy and solidity essential for personal, academic and professional life, for new students it is not sufficient to learn how to use documentary resources, but it is necessary to be able to master reading, to improve memory, to learn how to organise and manage one's own work and time.

[75] In these papers, the author, thanks to thorough surveys conducted on several occasions over the following years and using different qualitative and quantitative methods, describes the experience of documentary education carried out at the University of Paris VIII starting from 1984, in which year the first training courses on STI were introduced; and thus he draws some general conclusions. See also the previous paragraph *University and.university library: diarchy or alliance? Some concrete examples.*

[76] The French expression is more effective: "découvrir et [...] s'approprier les allants de soi et les routines dissimulées dans les pratiques de l'enseignement supérieur" (Coulon, 1999).

Learning of documentary methodology enables students to master "the three fundamental operations of any intellectual learning, i.e. to think, classify, and categorise" (Coulon, 1996, 1999). In other words, it represents a sort of initiation: it allows students to move from "the time of foreignness" – the time of their entry into the unknown world of university, characterised by a double rupture, both institutional and pedagogical – to "the time of apprenticeship and learning" – their progressive adaptation to the university needs and the university rules, institutional, formal, practical as well as intellectual and scientific – and finally to "the time of affiliation" – in which the acquisition of the new codes enables students to interpret them and to act responsibly and with maturity[77].

At the higher levels, documentary education is more subject-oriented and specialised, and requires a more critical and conscious approach: students, in fact, whether they turn to the labour and business world or to research, must be able to identify and analyse their information needs, to search for, select, organise and use information; thus, to master heterogeneous sources and resources, specialised tools, advanced search strategies; moreover, they must be able to evaluate and review contents (now vital competencies due to the incremental increase of information available on the Net, of very different quality); lastly, they must know how to use the new ICTs in information handling and management and master the different ways, media and channels of scholarly and professional communication, scientific publishing and writing, e-publishing.

Many problems and limits intrinsic to the initial stage – denounced almost ten years ago by Colas (1999) – have already been overcome or are currently being overcome.

Likewise, several then recommendations and suggestions were, though partially, accepted and implemented. The pioneer stage of experiments – often exclusively based on the goodwill and dedication of the librarian of the SCD – and the persisting extracurricularity of the courses were overcome in favour of their higher integration into the academic *curricula* and of a growing spread of State-authorized training programmes.

The sharing of practices, experiences and resources, the work on the Net and the production and dissemination of new, more effective pedagogical

[77] Cf. Fontaine, F. (2000). *Université nouvelle et affiliation.* Thèse de sociologie. Université Toulouse le Mirail. UFR de Sociologie. Année universitaire: 1999-2000 <http://www.ove-national.education.fr/derniers_concours/concours2000_3e_prix_ove_2000.pdf>.

tools have allowed to make them known and to promote them, especially through the URFIST network and the FORMIST.

An increasing homogenisation of practices, the development of common cognitive and learning models, shared standards, national and European policies, and finally social sensitivity and mass awareness have allowed on one hand to go beyond the traditional boundaries of the SCD and to involve more and more teachers and all the different university actors, previously scarcely concerned and interested; on the other hand, to mitigate the strong disciplinary differences.

Now it is unanimously agreed that documentary education must be entrusted to pedagogical teams formed by teachers and librarians-documentalists. The SCDs must become true vanguard didactic "laboratories", able to provide students and researcher teachers with the new documentation tools, the new electronic resources, and the new information sources, and to teach their use through practical work and experiential exercises in small groups, continuously updating methods, knowledge and competencies (Colas, 1999; Van Dooren, 1999).

University must resolutely open out to the labour world and foster professionalisation. Documentary education can truly mark the turning point for HE renewal: in fact, "to be able to work in teams, to accomplish a project, to perform an effective search on the Internet" are regarded as essential competencies for professional insertion and development (Rapport IGAENR, 2006).

Besides, it is crucial that, in the current context of IS, documentary education more and more expands and consolidates also in secondary education, the CDI consequently becomes the favourite place for its active learning and a comprehensive path is designed, in which documentary education is distributed, in a progressive gradation and deepening, from primary education to university and the labour world, in the framework of lifelong learning.

Therefore, the strong relationship MTU-TPE can provide a useful bridge between secondary education and higher education, on which to build a more solid, explicit and structural continuity.

In conclusion, documentary education should represent the activating stimulus for pedagogical renewal common to secondary and higher education, and the CDI and the SCD should respectively become the privileged places of learning and experimentation, under the sign of cognitivism and constructivism.

7. School on the move

7.1 Secondary education and documentation: an ancient and fundamental relationship

As well as in HE, also in secondary education documentation and awareness about its importance and its native link to education have long been diffused.

Already in the 1950s, it was stated from institutional parties that documentation has an essentially educational purpose[78]. And the weight of the component "education" has been gradually consolidated and increased.

In the middle and high schools – respectively called *collèges* and *lycées* – the educational vocation of documentation is fulfilled in a concrete place, the CDI - Information and Documentation Centre (*Centre de documentation et d'information*), through its main actors, the librarians-documentalists.

In 1998, the irruption of the IS, the development of the Internet, the explosion of information and new technologies put the CDI and its staff in the foreground, emphasising their educational function. It resulted in the necessity "to multiply and diversify the situations of documentary research according to disciplinary learnings", operating on three planes and equally involving learners and teachers: to initiate learners in research, with respect both to the methodological approach and the techniques; to teach them to interrogate databases, extract information, assess sources; to teach pupils and teachers to use ICTs for a pedagogical purpose (Blanchet, 1998).

Have these goals been achieved in the last decade?

Actually, the situation appears highly diversified.

At times, the CDIs, thanks to librarians-documentalists, have become comfortable spaces, well-furnished, equipped with the most up-to-date pedagogical tools, real pilot labs at the core of the school open towards the outside, able to transmit "an image of modernity", bound up with didactic innovation, advanced documentary research, new technologies. Elsewhere, they have been ignored, neglected and undervalued by teachers, so that they have been suffered a persistent marginalisation.

Hence, the landscape appears multiform, similar to that of university: some teachers would manage it by themeselves, some totally delegate it to librarians-documentalists, even regarding it as just "the matter of documentalists"; some again prefer to collaborate with librarians-

[78] Cf. Circular 13th October 1952: *The role of documentation in secondary education.*

documentalists and actively participate in multiple pedagogical teams and in a shared educational project. This last option allows documentation and the CDI to come out of a sort of "ghetto".

On this matter there is a considerable social and civil maturity: the role of documentation is considered essential by most school heads and there is a widespread and growing awareness in society too.

However, the principal changes of the second Twentieth Century – i.e. a pedagogy which puts in the foreground the autonomy of the learner, project activism, and direct experimentation; the network as the main organisational and cognitive structure; the uninterrupted expansion of ICTs and new media – allow "a new legitimation of the role of documentalist" and of the role of documentation, innovating and radically transforming their features, and enormously increasing their educational dimension (Rapport IGEN, 2004).

Various circulars of 2003 and 2004 drew the new profiles of the documentalist and of documentary education at school: thus several librarians-documentalists have taken part in the pedagogical teams at the side of teachers, and documentary education ceased to be too narrow, technical and formal, and has become wider and functional.

A large collaboration between documentalists and teachers has become urgent and crucial within the common framework of cognitivism and constructivism, designed by contributions and studies between 2002 and 2003. What unanimously emerges is the decisive importance of a theoretical-methodological rather than technical-practical approach to documentary research and related education. Students have to identify the goal to be achieved and consciously build a proper mental representation. Therefore, problem solving and contextualisation become central issues.

Information searching requires, above all, appropriate "modelling"; in this respect, the EST model - composed by the sequence of three following processes: *évaluation* (evaluation), *sélection* (selection) e *traitement* (handling, management and processing)[79] - is helpful and significant.

7.2 Towards a portfolio of I&D competencies?

The second challenge in secondary education is the assessment of competencies in information searching and documentary research.

[79] Tricot, A., & Rouet, J.-F. (Eds.). (1998). *Les hypermédias: approches cognitives et ergonomiques.* Paris: Hermès.

There have been many experiments since 2000: in primary as well as in secondary school, the great variety of initiatives has been intended to create a portfolio of competencies in I&D.

Therefore, three fundamental strands can be identified:

1. the specific IL sphere, not much widespread and born in the library environment of CDI (for ex. the CAMI);
2. the second axis, which highlights some I&D competencies within the pair the Internet and IT; it is the B2i certificate, which creates, together with the C2I certificate[80], an uninterrupted certification path, ranging from primary school to secondary education to the Master's degree level; this line – not pervasive and in course of stabilisation and expansion – is characterised by the connection IL-ICTs, successful in other parts of Europe, but still much more limited in France, compared with the third methodological trend, related to Documentation;
3. the prevailing route, referring to documentary methodology in a broad sense, characterised by a an extensive theoretical-critical and scientific approach centred upon autonomous learning, which puts documentation competencies in the line from the TPE of secondary education to the academic MTU.

The most considerable initiatives are described below.

CAMI – The CAMI - Certificate for Information Literacy Skills (*Certificat d'Aptitudes vers la Maîtrise de l'Information*)[81], specifically focussed on IL, was developed by the documentalists of the CDI of the Collège Saint Gatien. From their points of view, the development of documentation competencies – essential for all future citizens and future employees – cannot be a prerogative of documentalists, but should become "a collective responsibility of all the pedagogical actors" of secondary schools.

The CAMI allows to assess the information competencies – which are rigorously transversal – through eight main steps, which examine: the documentation places; documents and information supports; information searching and its tools; how to select, handle and manage information; how to communicate and disseminate it.

[80] Cf. *supra*, the chapter *Certification trials at university: yet more ICTs?*

[81] Cf. http://savoirscdi.cndp.fr/pedago/Reflexion/koenig/koenig.htm; http://savoirscdi.cndp.fr/pedago/Reflexion/koenig/evaluation.pdf.

B2i – The B2i - IT and Internet proficiency certificate (*Brevet informatique et internet - école, collège, lycée*) for primary, middle and high schools (mainstream and technical schools, vocational schools) was created in 2000 by the Ministry of Education's Directorate for Primary and Secondary Education through an official memorandum. It is not focused on information or documentation competencies, but regards a generic IT literacy, at the present time considered indispensable[82]. In fact, its goal is "to identify a set of key skills and provide evidence that the students involved have mastered them". Thus it is consistent with the C2i, not long after introduced in HE.

There are five topic areas, the same in the three levels (primary – middle – high schools), in which basic I&D skills are included:

"- *area 1: familiarity with an IT work environment;*
- *area 2: adopting a responsible attitude towards technology and its use;*
- *area 3: creating, producing, managing, handling, processing and using data;*
- *area 4: informing oneself, documenting oneself;*
- *area 5: communicating and sharing ideas*"[83].

TPE – Since the school year 2000-2001[84], the TPE - Supervised Personal Works (*Travaux Personnels Encadrés*) have been included among the compulsory teaching programmes. They are carried out by students under the pedagogical responsibility of teachers. Learners autonomously work, in groups or individually, on a project concerning themes selected by teachers and documentalists on the basis of the national list. The work autonomously carried out by pupils requires the steady and effective guidance – practical and material – of pedagogical teams, formed by documentalists and teachers operating in close sollaboration.

The TPE should not be reduced to "the mere preparation of thematic dossiers", but require a preliminary work of "documentary research": teachers should guide learners in defining and developing the project; pupils should

[82] To confirm that they are knowledge and abilities regarded as essential for social and professional life, in 2001 a B2i certificate for adults, the B2i Greta, was also introduced, whose *référentiel* includes a section specifically devoted to the Web ("to consult the world wide web using a browser; to make logical information searching").
Cf. http://www.education.gouv.fr/botexte/bo010830/MENE0101630N.htm.

[83] Cf. the annexes to the decree of 14th June 2006 published in the *BOEN*, n. 29, 20th July 2006 <http://www.education.gouv.fr/bo/2006/29/MENE0601490A.htm>.

[84] Decree 18th March 1999 <http://tpe.scola.ac-paris.fr/textes_officiels.htm>.

conduct researches autonomously and know how to select and use relevant resources; documentalists represent the natural and necessary landmark.

The guiding principles of the TPE were outlined by Jack Lang, the then Minister of National Education, on 27th April 2000: flexibility, a progressive definition, a national framework, coherence and continuity with HE, in order to constitute a single educational *fil rouge*, of gradual emancipation of the learner, especially through the TPE, the MTU, and the PPP.

The TPE – essential to achieve the baccalaureate diploma – is distinguished by its methodological approach in which the individual perspective and the point of view of the student are central through the three main stages of student work, i.e. "documentary research, production, presentation".

Besides, it is not by chance that during the years 1999-2000, immediately preceding the introduction of the TPE, a radical reform involved the French *lycée* (Rapport IGEN, 2000).

The TPE was born from the spirit of this comprehensive reform in the sign of constructivism: "the building" and the mobilisation of knowledge and know-how which it proposes within original and interdisciplinary activities is not extemporaneous and impromptu, but "naturally" takes always place in connection with disciplinary contents, and thus with traditional teaching. And, in order to avoid "the documentary whole", the documentary component is balanced by an intense experimental activity.

Documentary research appears characterised by a fundamental multidisciplinarity. Hence the multiplicity of approaches (paper sources, Internet searches, interviews), and the work of progressive construction and synthesis carried out by groups of learners are favoured.

The importance of resources and documents, and thus of documentalists, is evident and the CDI appears as par excellence "the documentation place".

Therefore, one of the principal problems is the exiguity of CDIs – in terms of dimensions and space, and of human, financial and technological resources – compared with the overload of work and responsibilities.

In conclusion, it can be argued that a comprehensive portfolio of multiple I&D competencies[85], or rather "a sort of B3i - Information, IT and Internet certificate"[86] (Rapport IGEN, 2004), has been appearing, which at last could combine the three "urgencies" of the French school in a homogeneous standard.

[85] "un portefeuille de compétences documentaires et informationnelles (PCDI)".

[86] "brevet de compétences en matière d'information, d'informatique et Internet".

7.3 Documentary elements in the new programmes

The transversal pervasivity of IL, and in particular of documentary research, also characterises the new programmes of *collèges*[87], in which documentary methodology is closely combined with classification and research, problem solving, critical thinking, autonomous learning, personal, social and professional awareness and emancipation.

Information "knowledge and competencies" gather in two areas: "Scientific and technical culture" and "Information and communication technologies".

General, theoretical-methodological competencies and skills - such as: "to inform oneself, in particular to capture data, to use documents; to reason, in particular to classify, to correlate[88]; to adopt a research approach, give proof of one's own critical mind in order to solve a scientific problem" - are comprised in the former domain; moreover, there are some basic communication skills, with special regard to mastery of scientific language.

On the contrary, in the latter cluster the ICTs are regarded above all as *a new* and precious *pedagogical tool.* Pupils have to learn how to use them not only through the technology course, but within all the subjects, for different purposes and during different activities, among which there is precisely "documentary research". Therefore, once again in the European manner, IL and IT are closely related.

If knowledge and competencies of the "common core" described in the annex to the Decree n. 2006-830 of 11th July 2006[89] - which illustrates the "seven key competencies" of the common core ("the seven pillars") of compulsory education - are minutely examined, it is realised that transversal I&D knowledge, competencies and skills, or anyhow close and related to I&D, are several and concentrate in four "pillars".

Particularly, in the fourth one, "Management of the most common ICTs", skills such as "to create, produce, handle, manage and use data; to get information, to document oneself; to communicate, to exchange" are included. Moreover it is stated that "the development of the taste for research and information exchanges for educational, cultural, social and professional purposes" have to be accompanied by "a critical and reflective attitude towards available information".

[87] Cf. http://www.education.gouv.fr/cid81/les-programmes-au-college.html.

[88] clearly similar to "penser, classer et catégoriser", the three pillars of documentary methodology according to Alain Coulon (1996, 1999).

[89] Cf. http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000818367&dateTexte=.

In the sixth pillar, "Civil and social competencies", the ability to classify, hierarchise, review and objectively evaluate information is emphasised.

Finally, the seventh one, "Autonomy and initiative" includes, within the subdomain "Autonomy", the following skills and abilities: "to rely on the work methods (to organise one's own time and work; to take notes; to consult, on one's own initiative, a dictionary, an encyclopaedia or any other necessary means; to concentrate, to memorize; to prepare a dossier, to expound);... to identify a problem and to develop a solution approach; to search for useful information, to analyse, select, hierarchise, organise, synthesise it; to correlate knowledge acquired in the different disciplines and to mobilise it according to the various situations".

With regard to the school programmes, the FADBEN - Federation of Documentalist Teachers of the National Education (*Fédération des enseignants documentalistes de l'Education nationale*) recently made two kinds of criticism, both essential[90]. Although I&D knowledge and competencies are largely present in the "common core", the recognition of their specificity - and thus of the role of documentalist teachers as responsibles and experts of that specific domain of knowledge and competencies - is still absent. It is even more serious since knowledge and competencies in I&D, just because intrinsically transversal, cross almost all the disciplines, and there is nobody who can guarantee their consistency and scientificity as they lack a proper, co-ordinating and responsible person/entity, that would be precisely the *documentalist.* Moreover, within the common core disciplinary teachers are not invited or encouraged to adopt a true co-disciplinary approach in order to effectively collaborate with documentalists, and there is no explicit reference to the educational action of LIS professionals.

Due to evanescence of their role, indeed, advanced and qualifying I&D competencies "risk remaining uncertain and implied issues, if proper learnings are not implemented". Therefore, documentary teaching programmes suffer by a threefold lack: the lack of guidance from documentalist teachers; the lack of an I&D *référentiel,* which conveniently defines and structures teaching contents and assessment criteria and methods; the lack of time scheduled and specifically allocated for this teaching within the school *curriculum.*

[90] Cf. http://www.fadben.asso.fr/spip.php?article38 (published on 5th June 2008).

In order to overcome such critical deficiencies, the FADBEN formulates three constructive proposals: to assign the role of "responsible for the development of knowledge and competencies regarding information culture" to the documentalist teacher; to plan the formalisation of an appropriate *référentiel*, which collects and organises knowledge, competencies and assessment modalities; to accurately schedule documentary training sessions – structured in a modular fashion – within the school timetable.

7.4 Documentary education and primary school

"The primary school is not a simple stage of schooling: it is the key to success in all the others, since it is the foundation of education..., which will continue for all the life"[91].

Therefore, in view of the general reshaping of education from school to university and in the urgency of creating a new, deeper connection among the different education levels, the focus – in the programmes for primary school introduced in 2002 as well as in those introduced in 2008 – is primarily on research activity and on the basic critical and methodological skills; consequently, documentary education is largely present. To sum up, the aim is "to specify the project/to prepare the research, to search for, handle, return, memorise and reinvest acquired methodological knowledge" (IGEN, 2004).

Nowadays, it is vital to come to a balanced and shared articulation of documentary education, arranging, graduating and distributing it among various school levels, from primary to secondary education.

7.5 A concluding assessment

There is a general agreement on some specific action lines.

Due to the huge and rapid increase of available resources, it has become essential for students to learn how to manage, select, evaluate, hierachise and critically use information. It entails a different organisation of teaching, which should be based on active learning, interdisciplinarity and learning through exploring, and has to take full adavantage of the ICTs, of the laboratories and CDI as privileged learning environments.

[91] It is stated in the *Preamble* to the new programmes for primary school of June 2008, in which the main principles inspiring the reform are concisely presented.
Cf.: http://www.education.gouv.fr/bo/2008/hs3/preambule.htm.

Besides, some precious suggestions and proposals on "how to improve documentation competencies of students", provided by secondary teachers on the occasion of the study conducted in 1999 (Chi-Lan Do, 2003), have been confirmed by all the recent school reforms.

First of all, it is imperative "to preserve the transmission of fundamental competencies" and even to enhance its effectiveness, and to increase the solidity and consistency of methods and basic knowledge; on its basis, to build the structure of documentation competencies.

Secondly, it is necessary to update and expand the technical equipment, facilities, instrumental and documentary resources of schools: a larger number of multimedia and ICT tools, free access to the Internet, etc.

Finally, "the integration of the document into pedagogical practices" is crucial. It means rethinking the school timetable and consequently redistributing hours and activities: in fact, directly accessing documentary sources and learning how to use them in a constructivist learning environment requires much time. Thus it is necessary to allocate specific time for searching for documents within the *curriculum* timetable, setting up definite didactic sequences and *ad hoc* modules.

Therefore, documentary education has to start at the beginning of primary school and to develop progressively and coherently until the end of secondary education. The motivation of the pupil, and thus his/her active involvement, are fundamental. All the *topoi* of cognitive psychology and constructivist didactics here are at stake: documentary research and discovery; the motivation for reflecting, understanding, problematising; conceptualisation and modelling; opening towards the outside, the extra-scholastic environment; problem solving and work on assigned topics, with a strong emphasis on research methods and the preparation of dossiers; critical evaluation of resources; the analysis of different types of document, their study and selection, a field in which history teachers are very sensitive and attentive.

To sum up, documentary education means once again cognitivism, constructivism and interdisciplinarity, showing its essential relationship with *the discovery routes*[92], the diversified paths, autonomous learning and project learning.

"Working together with documentalists" is another key demand felt by disciplinary teachers. Therefore, on one side documentalists have to be integrated into the pedagogical teams – which are hoped to be interdisciplinary

[92] *Les itinéraires de découverte* (IDD) <http://eduscol.education.fr/D0072/itinerairesdecouverte.htm>.

– besides teachers and as educators and trainers have to be present in the classes, in the laboratories, in the CDI. On the other side, the essential presence, active and pro-active, of the CDI in school life has to be promoted and supported by any means: thus specific hours devoted to documentary research and work on documents have to be scheduled for pupil groups.

Finally, there is a general awareness from disciplinary teachers of the need to acquire or improve and continuously update the new critical competencies, in order to gain the mastery of today's fundamental tools: ICTs, multimedia, the Internet, and, last but not least, documentary resources and search strategies.

7.6 Towards a comprehensive documentary policy

As it has been seen, it has been recommended by many sides on the one hand to fully integrate documentalists into the pedagogical teams of schools, and on the other hand not to leave documentation only to documentalists - though their role is crucial – but to turn it into a core concern of the entire school community. Hence the urgency of a real comprehensive documentary policy arises, whose key issues can be summarised as follows: "teaching, education-culture, orientation-inclusion" (Rapport IGEN, 2004).

Several pilot initiatives have been spread over the *lycées* since 2002, in a great fervour of experimentation. At the same time, the attention and sensitivity of the university have been increased, revealed by the rich ferment of studies, actions and interventions: all these highlight the core link between the school's pedagogical action and the academic policy. In the opinion of most people, the tie among primary school, middle school, high school and higher education has become more and more evident (Rapport IGEN, 2004; *Lettre de mission Pécresse*, 2007).

In school the strengths are accompanied by weaknesses and criticalities.

How to train documentalists able to train? To date, the question has not received a univocal and certain answer, though its urgency is recognised; the lack of a unitary direction, and of a coherent, purposeful and homogeneous line in training of trainers increases the fragmentation of experiences and the uncertainty of the general situation.

Moreover, it is fundamental to rapidly react and strive against "the technological drift of documentalists", bearing in mind that their hybrid position, ambiguous between information and education, constitutes a risk factor.

In conclusion, against the heterogeneity and the structural weakness of a sector which, however, is the vanguard in pedagogical innovation from many points of view, nowadays a national documentary policy for the school as a whole is more and more urgent, which acts on multiple fronts:

- specifying the socio-pedagogical terms of IL and the functions of documentalists in the school institution;
- developing the documentation competencies of disciplinary teachers;
- building a portfolio of I&D competencies for students, which accompanies them from primary school to university.

8. Other national institutional initiatives[93]

Beside the principal strands of the school and university initiatives – in some way predictable – since the beginning of the third millennium there have been a growing commitment and interest from other Ministries and local institutions, focused on single initiatives as well as coordinated through common actions.

The problematic complexity of the world of work, the difficulties to be employed or re-employed for adults with a low professional profile or seriously lacking in ICT skills, the increasing unemployment or underemployment, a nightmare for the most part of Europe, the gap between the school-university and the world of work and business – particularly affecting the new generations – obviously concern *in primis* the Ministry of Labour; but they don't leave the Ministry of Culture and Communication, the Ministry of Youth and Sports and the diverse territorial communities indifferent, even involving them in a common effort.

Besides, a signal of attention and sensitivity from the entire Government and the major national institutions was given in 2003 by the CISI - Interministerial Committee for the Information Society (*Comité interministériel pour la société de l'information*) and, few months later, by the establishment of the Delegation for Internet usages (*Délégation aux usages de l'internet*): so the issue has become a national priority.

The Interministerial Committee for the Information Society took place in July 2003 – few months after the presentation of the "Plan for a digital

[93] For an overview of the different types of certification "outside the national education system" see: http://www.educnet.education.fr/dossier/b2ic2i/certifpim.htm.

Republic in the Information Society"[94] (November 2002) from the Prime Minister – with the declared aim of narrowing the digital divide "in its geographic and social dimensions", by enhancing the diffusion of ICTs and their democratisation, and the generalised use of the Internet.

The Delegation for Internet usages[95] was set up in December 2003, on the initiative of the Ministry of New Technologies, with the mission to propose measures in order to spread and promote across the social strata Internet access as well as training of families, children and large public in the use of the new technologies, the Internet and multimedia. Besides, it supports "the dissemination of information and good practices" and the policy of the public digital spaces (EPN), located in the national territory.

8.1 NSI - Surfing the Internet

The NSI (*Naviguer Sur Internet*) programme[96], decided by the Interministerial Committee for the Information Society in July 2000, was born in 2001 at the hands of the Ministry of Labour with the purpose to fight against social exclusion. It is intended for unemployed and working people, especially for those looking for employment and for those entering into the workforce or into a profession.

It allows them to acquire basic knowledge, competencies and skills necessary for "navigating, communicating and performing searches on the Internet", in an autonomous and project-oriented way. Training, preferably targeted at a public distant from ICT literacy, enables them to progressively familiarise themselves with the PC and the Internet, and consequentely it allows a real "debunking" of these tools, nowadays become pervasive; it consists of a module (ranging from 14 to 18 hours) which introduces to ICT and multimedia skills, and to the Internet. The great majority of those who took advantage of it was unemployed and the module, for more than half of them, is only a part of a wider educational programme.

[94] Plan RE/SO 2007 (*Pour une REpublique numérique dans la SOciété de l'information*) <http://www.internet.gouv.fr/informations/information/plan_reso2007/>.

[95] Cf.: http://delegation.internet.gouv.fr/index.htm.

[96] See http://www.travail-solidarite.gouv.fr/spip.php3?page=rubrique_dossiers&id_rubrique=544; http://www.travail-solidarite.gouv.fr/etudes-recherche-statistiques-dares/etudes-recherche/publications-dares/premieres-informations-premieres-syntheses/2006-43.1-initiation-naviguer-internet.html?var_recherche=nsi; and the useful report Fleuret, A. (2006). L'initiation "naviguer sur Internet". *DARES. Premières Informations et Premières Synthèses*, n. 43.1 (October 2006), <http://www.travail-solidarite.gouv.fr/IMG/pdf/2006.10-43.1c.pdf>.

The *référentiel*[97] related to the certificate in surfing the Internet identifies three key skills and competencies:

1. Surfing the Internet;
2. Communicating through the Internet;
3. Performing searches on the Internet.

More specifically, in the third area some basic information skills are focused on Internet searching.

8.2 PMI - Passport for the Internet and multimedia

The PMI (*Passeport pour l'Internet et le Multimédia*)[98] was born in 2002, in order to promote and spread among the large public the use of ICTs and the Internet. It is especially aimed at those who are lacking in ICT skills and in professional training.

The PMI is "a tool for training and assessment of acquired competencies. It is not a professional certification, but a certification of basic competencies in using a computer equipment and basic Internet services".

The related training programme enables trainees to learn how to use a PC connected to a network, basic Internet services and simple interactive services (information searching, e-mail, etc.).

The national *référentiel*, updated to February 2007, covers five types of competencies, centred upon five core objectives:

1. To know and use a computer equipment and its softwares;
2. To navigate the Internet;
3. To communicate through the Internet;
4. To create and use digital documents;
5. To know the elementary rights, rules and regulations of the Internet, and its correct use.

In particular, "To navigate the Internet" includes "To inform oneself through the Internet", which in turn encompasses various information skills, from searching for information to its evaluation.

[97] Circular DGEFP/DARES/AFPA/ANPE n. 2004/011 of 29th March 2004 concerning the implementation of the Internet basics module. Cf.: http://www.travail-solidarite.gouv.fr/IMG/pdf/la_circulaire_DGEFP-DARES-AFPA-ANPE_No_2004-11_du_29_mars_2004.pdf.

[98] Cf.: http://delegation.internet.gouv.fr/netpublic/pim.htm.

This initial training in using ICTs and the Internet is provided by the EPN - Public Digital Spaces (*Espaces Publics Numériques*) certified as "Netpublic", which deliver active learning, discovery and experimentation activities open to all, implemented, guided and facilitated by trainers skilled in management of activities and ICT teaching.

At the national level, the EPNs[99] include the "Multimedia Culture Spaces" (*Espaces Culture Multimédia*), funded by the Ministry of Culture and Communication, and the Cyber points - Young Digital Space (*Points cyb-espace jeune numérique*), supported by the Ministry of Youth and Sports.

The national EPNs entwine their activities with those of the Public Multimedia Spaces of the territorial communities, which cooperate with the national State in fighting against the digital divide and all the inequalities (geographic, social, cultural, economic), multiplying the public access points to the Internet and providing initial and advanced training in ICTs and in the main Internet usages.

9. *Référentiel* trials[100]

Contemporaneously with the development of the British Seven Pillars of Information Literacy, of the five American standards[101] and of the Australian and New Zealand Information Literacy Framework, France has tried to build a shared framework for the I&D competencies, for secondary education as well as for university.

The first one is the so-called *FADBEN référentiel*, a *référentiel* of I&D competencies developed by the FADBEN for secondary education (*collèges* and *lycées*) in far off 1997.

Its aims are the following:

- To offer a common shared terminology both to documentalist teachers and disciplinary teachers, so that the same competency objectives are indicated through the same terms;

[99] Cf.: http://www.delegation.internet.gouv.fr/netpublic/presentation.htm.

[100] Cf. Chevillotte, S. (2005). Bibliothèques et *Information Literacy*. Un état de l'art. *BBF, 50*(2), 42-48 <http://bbf.enssib.fr/sdx/BBF/frontoffice/2005/02/document.xsp?id=bbf-2005-02-0042-007/2005/02/fam-dossier/dossier&statutMaitre=non&statutFils=non>.

[101] Respectively, the SCONUL (Society of College, National and University Libraries) model <http://www.sconul.ac.uk/groups/information_literacy/seven_pillars.html> and the ACRL (Association of College and Research Libraries) Information Literacy Competency Standards for Higher Education <http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.cfm>.

- To contribute to creating pedagogical sequences provided with clearly defined objectives;
- To clarify the terms of the partnership in the development of pupils' competencies: that is to say the mutual relations and the respective roles among the different partners, within the specific activities related to documentary education and IL;
- To promote the joint evaluation of actions.

Its most considerable characteristic is undoubtedly the prevalence of the "research" factor: in the general perspective of the "learning society", the target skills directly correspond to the following steps in a research process.

The *référentiel* is structured in seven main stages and consists of a list of skills and competencies regarded as indispensable so that pupils, at the end of secondary education, are actually information literate. Moreover, it also describes which specific knowledge and competencies intervene in the IR process. It is also a tool for librarian teachers to develop these skills and competencies through different activities within the school *curriculum.*

A wider education, transversal and scientific methodological, combines with the growing autonomy of learning, and with the solicitations and stimuli issued from the international IL debate.

Therefore, once again, to know "how to research", to know "how to search for", and to know "how to inform and document oneself" achieve the typically French association among research, documentary research and IL.

The *référentiel* was completed in March 2006 by the *Référentiel métier*[102] for the documentalist teacher, a work tool which exhaustively illustrates competencies and activities peculiar to documentalist teachers within the school institution and provides a broad and up-to-date overview of the profession. The profession has the pedagogical mission "to develop the information culture of pupils within the framework of the school institution". The *référentiel métier* is also a powerful support in order to promote an effective documentary school policy, which truly fosters and encourages pupils' education in I&D.

Hence, teaching I&D skills means to turn documentalist teachers into teachers of a new school discipline, "information-documentation", in order

[102] Cf. Un référentiel métier pour l'enseignant documentaliste. *MEDIADOC FADBEN*, March 2006 <http://www.fadben.asso.fr/IMG/pdf/Mediadoc-mars2006-enligne.pdf>.

to build a single educational path for all learners. And the CDI is the primary tool for achieving it.

The combination between the two *référentiels* is helpful and even necessary, since they offer two complementary approaches: the perspective concerning learners' competencies and that on the profession of documentalist teachers, i.e. the image of the profession drawn by its pedagogical mission and its specific competence domain.

In the wake of the *FADBEN référentiel* - aimed at secondary students - and in continuity with it, EruDist, a *référentiel* of competencies in documentary research intended for first cycle university students, was set up in 2004. Developed by a working group led by the Interoganization Service for Documentary Cooperation (SICD 2)[103] of the Universities of Grenoble II (Pierre-Mendès-France) and Grenoble III (Stendhal), it illustrates the main documentation competencies essential for the "profession" of the university student. It is intended for teachers and documentalists in charge of documentary training programmes, so that they can use it as a guide to be adapted to their needs.

Also this *référentiel* has the peculiarly French merit of blending, in a harmonious synthesis, the very documentation competencies, hierarchised in the solid structure of Documentation, with some essential, more general, study and academic skills, functional to the academic and professional success of university students; and thus both the spheres with indispensable tools and operational techniques, openness to research and research skills, and attention to the current information universe and its problems. A comprehensive and organic vision organises the transversal and methodological knowledge and competencies, developing them from a practical point of view, in order to achieve specific objectives, logically and chronologically correlated.

10. A step forward in the right direction: the ERTé project

The ERTé project "Information culture and documentary curriculum"[104], fully exploiting the French peculiarity, aims at harmonising and rationalising

[103] *Service Interétablissements de Coopération Documentaire* SICD 2 Grenoble <http://bibliotheques.upmf-grenoble.fr/95407363/0/fiche___pagelibre/>.

[104] Cf.: http://geriico.recherche.univ-lille3.fr/erte_information/?/.

documentary training programmes across the whole course of study, from pre-school to university, re-organising them in a single coherent path.

It was born following the valuable experience gained through the National meeting for information literacy education (*Assises nationales pour l'éducation à l'information*) held in 2003: organised by important institutions active in teaching and research[105], it involved the world of information sciences, documentation and libraries[106], the academic world[107] and the Ministry of Research/Square of Sciences (*Carré des Sciences*).

It is a multidisciplinary project encompassing educational sciences, information and communication sciences, social sciences, cognitive sciences, and, above all, cognitive psychology.

Its main goal is to develop a unitary documentary *curriculum*, which accompanies the student throughout his/her entire school and university career. It entails formulating principles and analysing case studies and experiences which to date have contributed to didactic progress.

The major repercussions will be on the one hand the modernisation and adaptation of the education of documentalists, which shall become more consistent and effective, and on the other hand a greater awareness amongst disciplinary teachers, who shall hold documentary education in higher esteem, ensuring its definitive legitimation.

A "research team on educational technologies", funded by the Ministry of National Education, was set up in 2006 to undertake an interdisciplinary research programme on "Information culture and documentary curriculum" – upon which the ERTé project is based – in order to propose innovative solutions and build concrete strategies for fostering and expanding

[105] The FADBEN, the GREMI - Discussion Group on the Teaching of Information Methodologies (*Groupe de Réflexion sur l'Enseignement des Methodologies de l'Information*), the INRP - National Institute for Pedagogical Research (*Institut National de Recherche Pédagogique*), the University of Paris3/CEVU - Council of Studies and University Life (*Conseil des Etudes et de la Vie Universitaire*), the URFIST of Paris.

[106] The ADBU - Association of University Library Directors (*Association des Directeurs de Bibliothèques Universitaires*), the CLEMI - Centre for Liaison between Teaching and Information Media (*Centre de Liaison de l'Enseignement et des Moyens d'Information*), the CNDP - National Centre of Pedagogical Documentation (*Centre National de Documentation pédagogique*), the EduDOC Group (Belgium), the SFSIC - French Society of Information and Communication Sciences (*Société Française des Sciences de l'Information et de la Communication*), the AFL - French Association for Reading (*Association Française pour la Lecture*), the URFIST of Lyon, Nice, Rennes, Toulouse and Strasbourg.

[107] The University Denis Diderot Paris 7 / UFR EILA - Intercultural Studies of Applied Languages (*Études Interculturelles de Langues Appliquées*).

information literacy at school and university. Several research laboratories and academic institutions have collaborated. The project team is composed by experts from different backgrounds: most of them are researcher teachers, but there are also LIS professionals, teacher training specialists, school teachers and school librarians[108].

The main action lines are four:

1. Institutional, political and social issues of information cultures;
2. Usages, practices and representations of I&D;
3. Didactic approaches to I&D;
4. Professionalisation and training.

The *documentary curriculum* recuperates and encopasses the concept of "documentary passport", which arranges and marks the passage from a school/university cycle to another; it requires not only the redefinition and the critical reproblematisation of the disciplines and their didactics, but also the radical rethinking of the very notion of "discipline".

From a practical perspective, the building of this *curriculum* requires:

- attention to informal knowledge;
- a debate about the teaching of documentary techniques;
- identifying the implicit, not expressed, needs for documentation within the disciplines, discovering "implicit knowledge in documentation", so that this implicit knowledge becomes explicit, and thus it is recognised, taught and appropriately emphasised and improved.

To sum up, specifying better the elements which structure a documentary culture allows to identify principles and conditions necessary for developing the documentary *curriculum.*

The expected outcomes consist of recommendations and suggestions useful to establish a continuous programme of documentary learning from pre-school to university, which has to take into account the contributions of

[108] To the GERIICO – Group of Studies and Interdisciplinary Research in Information and Communication (*Groupe d'Etudes et de Recherche Interdisciplinaire en Information et Communication*) (University of Lille3) and CIVVIC (University of Rouen) laboratories – which constitute the initial core of the project – the other partners have been added: the ENSSIB/FORMIST; the FADBEN; the INRP; the IUFM - University Institutes for Education of Schoolmasters (*Instituts Universitaires de Formation des Maîtres*) of Lille and Rouen; the CNDP/Scérèn - Services Culture, Publishing and Resources for National Education (*Services culture éditions ressources pour l'éducation nationale*); the URFIST network.

genetic psychology, sociology, educational sciences and information sciences: despite the institutional heterogeneity, it requires a coherent and continual assessment of students' progresses. Therefore, there is an evident connection with certification and homogenisation of shared standards.

11. Concluding remarks

> *Fathers and mothers have lost the idea that the highest aspiration they might have for their children is for them to be wise... specialized competence and success are all that they can imagine.*
>
> *Education in our times must try to find whatever there is in students that might yearn for completion, and to reconstruct the learning that would enable them autonomously to seek that completion.*
> (Allan Bloom)

Between documentary education and IL, *Documentation*, with its indigenous kernel inherited from the past and the wide horizon of its architecture, in harmony with politics has little by little opened up to *Information*, resolutely – without prejudices, complexes or fears – extending its frontiers through space and time. In fact, precisely in order to revitalise and consolidate its sound structure, it is receptive and attentive to new stimuli and paradigms, promptly receiving the most topical knowledge and educational approaches; and thus it rightfully enters the European and international arena.

Moreover, the relationship of documentation with science and research, strongly emphasised and even extended to all the major educational levels by the recent reforms, fits in the same perspective: the declared purpose is to give new lifeblood and vigour to an educational structure that is ancient and yet not decrepit, which has to be updated and modified, but not distorted nor destroyed.

Similarly, the numerous attempts made towards a unitary *référentiel*, the different certification paths proposed, and the steps forward taken towards one documentary *curriculum* all move in the same direction: they try to draw a unitary educational plan, in spite of difficulties, contradictions, and the inevitable compromises.

What happens in the limited sphere of education in I&D is even more significant since it is the sign of a more general reality: the relation between French society and the real and ideal universe of education.

First of all, it makes for a sturdy bulwark against the "balkanization"[109] and the extreme specialisation of studies, the dispersive interchangeability of contents, and the multiplication and fragmentation of *curricula.* These phenomena were the monopoly of American universities until some decades ago, but now they represent a threat - no longer impending, but actually concrete - for European HE, which, burdened with age-old slowness and rigidity, is overcome by the urgency to innovate programmes and to modernise knowledge.

However, the French experience shows that a comprehensive educational plan is still vital: the general system, with its structural complexity, its development in time, and its constant increase, must certainly be rethought, reformed and even completely or partially rebuilt, but cannot be renounced.

European vocation, international competition, cognitivism and constructivism, in fact, are all stimuli to enrich it, to regenerate it, to make it more vivacious and versatile, certainly not to deprive it of content, nor worse to delete it, to condemn it as inexorably outdated and superfluous.

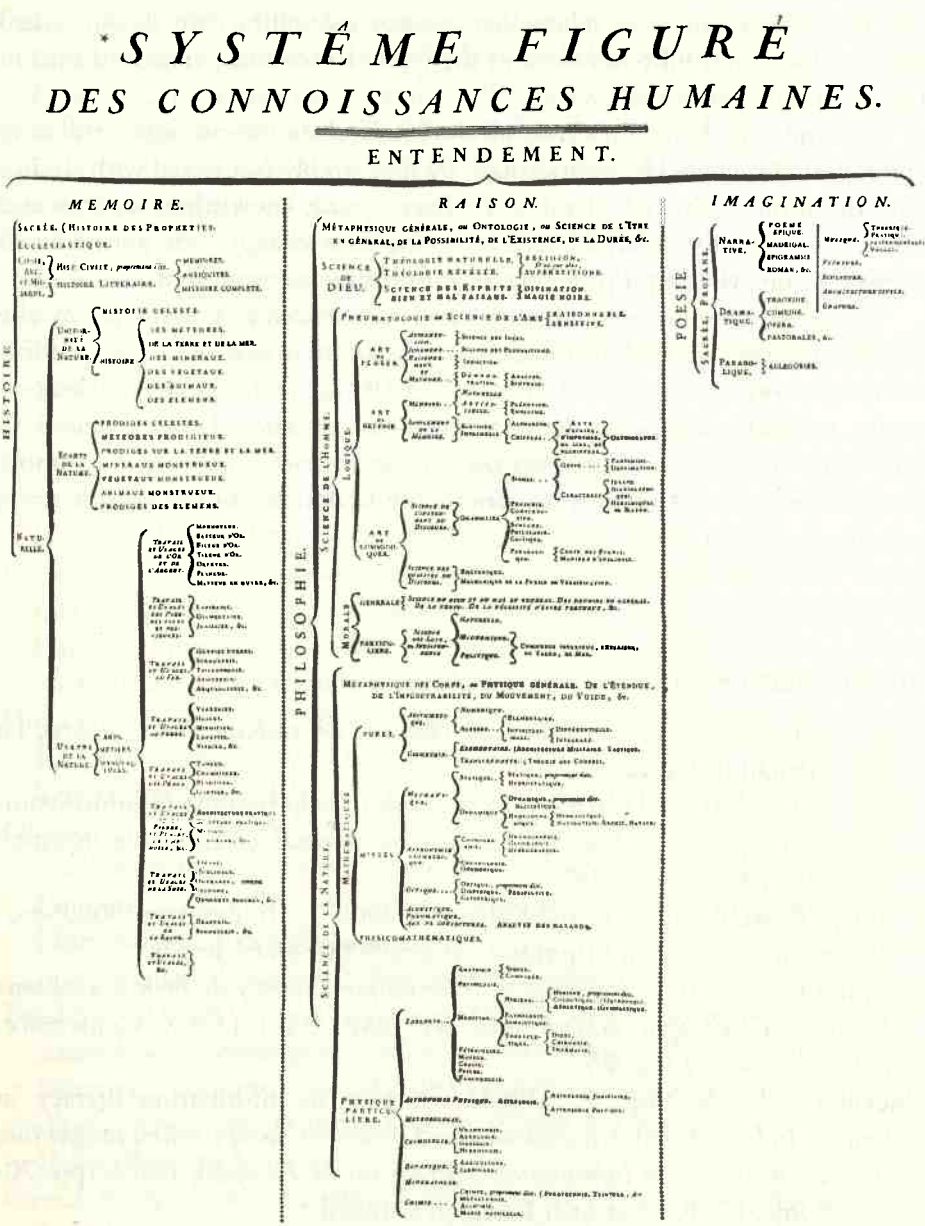
On the contrary, the mission at hand is exemplarily "positive", in the most significant and French sense of the word[110], that is wholly constructive and proactive. In fact, once again following the most genuine national tradition, the task of culture and education is not "to build an exhaustive conception... of the world", but "to comprehend and guide the civilisation in which we live", to investigate the meaning of the sciences, "to understand the direction of their development, to increase their possibilities, to make up for their deficiencies."[111]

This is a civilisation task, which – from a rigorously republican perspective – is the responsibility of society as a whole. The underlying ideas are the persuasion and the awareness that the identity of a country has always been a high ideal of research, civilisation and culture, made of

[109] Tony Judt, a historian at the New York University, recently defined this as one of the bitterest fruits of the ideological drift of American universities, already denounced twenty years ago by Allan Bloom in his famous book *The closing of the American mind,* which today is giving its author a renewed posthumous success.

[110] As used by Auguste Comte and in the circles of the École Polytechnique.

[111] Cf. Geymonat, L. (1971). *Storia del pensiero filosofico e scientifico.* Milano: Garzanti.Vol. IV, p. 435.



The *Figurative system of human knowledge* ("the tree of Diderot").
Table published in the first edition of the ***Encyclopédie*** (1751). Vol. I. Paris: Briasson, David l'Ainé, Le Breton, Durand. According to Jacques Proust, an eighteenth-century specialist with particular interests in the Encyclopaedia and Diderot, the system is "a compromise between a great and wide idea, inherited from Bacon, and the practical necessities required for alphabetical classification".

knowledge, contents and values that are not monolithic but dynamic and plural. This is faithfully mirrored in the type of *man* and *citizen* and thus in the proposed *educational design.*

Freedom, equality, democracy, all the ideals of the Revolution – still alive and repeatedly evoked by politicians – are inseparably connected with science and education: in the fatherland of the *Encyclopédie*, knowledge, contents and values are certainly manifold and in continuous change, but joined in an organic whole, whose purpose, measure, and barycentre is man.

Therefore, beyond any closeness and sectionalism, a παιδεία in the classical manner, indeed an ἐγκύκλιος παιδεία is not only still possible today but also necessary: in fact, as Allan Bloom said, "a *liberal education* means precisely helping students to pose this question [*what is man?*] to themselves, to become aware that the answer is neither obvious nor simply unavailable, and that there is no serious life in which this question is not a continuous concern"[112].

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INFORMATION LITERACY ACTIVITIES IN GERMANY BETWEEN THE BOLOGNA PROCESS AND THE WEB 2.0

*Thomas Hapke**

Abstract

The German information literacy scene in higher education is coined by diversity and change. The scope ranges from library practice which grew out of the classical user education to new course-integrated teaching activities as a result of library-faculty relationships because of the ongoing transformation of German universities through the Bologna process. Each library in higher education meets its own context within its parent institution. The new possibilities concerning electronic learning environments led also to library activities to produce online tutorials as well as to integrate their services in e-learning systems.

This paper gives a short overview about the diverse activities within the IL landscape in Germany, concerning:

- the political situation: After producing some reports and official statements in which IL is mentioned as a prerequisite of the information society the Federal Government supported projects like LOTSE or BibTutor;
- the situation in several Federal States and library unions and networks, where some developed even their own IL standards like Baden-Württemberg and have their own working groups, others have just begun their work in the sense of a "community of practice" like the working group IL of the GBV Common Library Network of the Northern Federal States;
- the German information literacy portal informationskompetenz.de which is hosted by Bavarian university libraries.

Also disciplinary differences, e.g. between subjects like engineering and the humanities, play a special role for the possible enlargement of library's IL activities. There are also activities in many other layers of the German educational system, especially concerning schools as well as adult education. For some actors, like the university departments which are responsible for the

* Hamburg University of Technology (TUHH). University Library, Hamburg - Germany

education of librarians and information specialists or brokers, information literacy is the key competence of such experts.
I will add to the paper some sentences about my personal view on IL: In the future the concept of information literacy predominating in German libraries has to be critically questioned, not only by the changing role of the user in information systems in the Web 2.0. More than to efficient retrieval and navigation strategies, information literacy is comparable to the creativity to organise and shape one's own information and learning process in a conscious and demand- oriented way. The view on information literacy may change in the direction of a more holistic view. Information literacy includes not only learning with information but learning about information and knowledge. In respect to this, issues as intellectual property and plagiarism or coping with information overload should be parts of IL activities. This drew heavily on insights taken from readings of authors of the international IL movement such as James Elmborg, Barbara Fister and Cushla Kapitzke. On the other side IL is only one of many key competences which are necessary for a life-long learning process. So, it may be good to look at IL also from a non-librarian view, e.g. from business, in which information overload for example is a key challenge.

1. Introduction

The German information literacy scene in higher education is coined by diversity and change. The scope ranges from library practice which grew out of classical user education to new course-integrated teaching activities as a result of library-faculty relationships because of the ongoing transformation of German universities through the Bologna process. Each library in higher education meets its own context within its parent institution. The new possibilities concerning electronic learning environments led also to library activities to produce online tutorials as well as to integrate their services in e-learning systems.

Although there are efforts of standardisation and merging of information systems through global players, through federated search systems or through portals which reduce the diversity, the development of the Internet led constantly to more diverse information systems. Not least this is seen with the emergence of the Web 2.0. The users of today have to know how to handle this information jungle to find their way and to make conscious choices.

2. The general situation of information literacy in Germany

The topic "information literacy" has been established in the German library scene since the end of the nineties of the last century. Between the years 2000 and 2001 the Federal Government supported a study on the information behaviour of students and university teachers showing a lack in information literacy in both groups (Gavriilidis, 2003). Shortly before first activities to reanimate what was formerly called user education led to a process of change starting within German libraries. In a statement of the German Federal Ministry of Education and Research (BMBF) the term *Informationskompetenz*, which is used in Germany for information literacy, was seen as a "prerequisite for efficient use of information" (BMBF, 2002, p. 8) in the information society. Today no university library gets away with not promoting information literacy by some means or other.

2.1 Literature and communication

Since the review articles in English language by Homann (2003a, 2003b) a comprehensive overview on information literacy in Germany appeared. In English translation it has the title "Teaching library in Germany: conveying of information and media literacy as a core role for public and research libraries" (Lux & Sühl-Strohmenger, 2004). 2007 followed a second German book including the term "teaching library" in its title (Krauß-Leichert, 2007). It contains a collection of papers by the main protagonists of the German information literacy scene from its beginning at the end of the nineties.

Today the subject "information literacy" is visible in frequent papers in German library journals as well as in regularly sessions taking place at library and information science conferences. In the November / December 2007 an issue of the German Library journal "Buch und Bibliothek [Book and library]" appeared with the main focus "Teaching Library"[1]. Also conferences devoted to the subject information literacy alone took place:

- In 2003 a series of conferences with the title "Die lernende Bibliothek [The learning library]" started. The first meeting was in Bozen (Italy), the next 2005 in Augsburg (Germany) and the last this year in Innsbruck (Austria).[2]

[1] *Buch und Bibliothek* (2007), *59*, 788-816.

[2] http://www.uibk.ac.at/ub/lernendebibliothek/, retrieved December 10, 2007.

- In 2004 the 4th Frankfurt Scientific Symposium brought international experts in information literacy to Germany. The title of this symposium was "What is literacy? What is information? What is knowledge? Ways of teaching and learning to use information effectively".[3]
- Lectures concerning the topic information literacy from Germany and abroad were given at the recent Konstanz Workshop on Information Literacy 2007, November 8-9, 2007.[4]

In Germany the political responsibility in the area of education lays in the governments of the Federal States of Germany. As a result there exists no common national initiative in the area of information literacy. Within Federal States or library networks working groups have been founded to coordinate work and to build a platform for communication. The working group in Baden-Wuerttemberg even developed its own information literacy standards. Others have just begun their work in the sense of a "community of practice" like the Working Group Information Literacy of the GBV Common Library Network of the Northern Federal States (AGIK GBV) which aims at promoting information literacy activities and create possibilities for communication within the participating libraries.[5] More formally organised are the libraries in North-Rhine Westphalia whose working group on information litearcy was founded in 2002 (Nilges & Reessing-Fidorra, 2006). They developed standards for the conveying of information literacy concerning teaching librarians, marketing, room set-up and technical requirements. In many universities in North-Rhine Westphalia information literacy courses are implemented in the curricula and get credit points.

The university library of Munich hosts the central portal for information literacy in Germany informationskompetenz.de which is a joint project of the information literacy working groups in the single Federal States. The portal contains an overview about activities in Germany, a growing collection of materials, a news service, and a service for statistical evaluation of information literacy practices in university libraries. In a position report the University Library of the Ludwig-Maximilians-University Munich described the situation

[3] http://www.ub.uni-frankfurt.de/messe/symposium2004/abstracts.html, retrieved December 10, 2007.
[4] http://www.ub.uni-konstanz.de/bibliothek/projekte/informationskompetenz/kwil.html, retrieved December 10, 2007.
[5] See for information about the AGIK GBV http://www.gbv.de/wikis/cls/Informationskompetenz, retrieved December 10, 2007.

in information literacy at a large German university (Schüller-Zwierlein, 2006), a situation which can be generalised to other German libraries.

2.2 Information literacy courses within university libraries

The range of courses in information literacy in university libraries has developed within three ways (Sühl-Strohmenger, 2007):

1) Independent courses (about 90 minutes or shorter) which were directly offered by the library often were less frequented. Nevertheless many libraries offer such courses. For example at the TUHH University Library a run of workshops with the title "SearchIng at noon" invites engineering students and staff for 30 minutes before or after lunch to learn and reflect on topics like "InformING by playing" or "In addition citations - searching for journal articles and analyzing citations in the Web of Science", "Searching for journal articles to identify the state of the art!" or "Exploring the Digital Library". An alternative for such courses may be the concept of road shows, developed by the university library of Freiburg, which presents information literacy issues as well as library services outside the library on the campus.
   In a recent talk Suzanne Rockenbach (2007) summarized her concerns about the usual practice of a 90-minutes-session for 150 participants to transfer information literacy contents. For Rockenbach it is important to provoke within the learners a positive attitude for life-long learning. For that reason it is necessary to make learners curious about what the information world can offer to them, so they will be more motivated to explore the information universe by themselves. In addition it is important for learners to create doubt as a pre-condition for their own thinking and for to be critical when searching for information.
2) One-shot sessions integrated in regular study courses are the second mode to deliver information literacy topics by university libraries. For the author at a University of Technology the situation today is still similar to the situation in the year 2000: Information literacy activities, based on personal contacts as a subject librarian and on faculty-librarian collaboration, led to an agreement that has existed for years between the Dean for Study in Chemical Engineering and the Subject Librarian for Chemical Engineering. So with one-shot presentations integrated in the curriculum of chemical engineering and biotechnology it has been possible to raise an awareness of information literacy and to reach at least

80 to 90% of the process engineering students. The range of topics concerning "The world of engineering information – 10 points to survive" (Hapke, 2007c), which should be included in such sessions, is often too large for reasonable learning of the audience. Especially useful are such one-shot sessions in the beginning of subject-specific study courses which are project-based and which aim at self-dependent learning.

3) The Bologna process led to a reform of the curricula in the direction of bachelor and master as final degrees. Accreditation offices force university administrations to include more courses in key qualifications into the curricula. Nevertheless the universities can decide themselves to which extent and how key competences will be implemented. So, many libraries have been asked to offer extra-courses in information literacy for a whole term of study with one or two hours every week. In this case the students can get credit points for this course. Students can select such a course as one of the obligatory elective subjects which have to be part of the area of key competencies. Disciplinary differences e.g. between subjects like engineering and the humanities play a special role for the possible enlargement of libraries' information literacy activities. The implementation of general key competence courses especially in engineering curricula could be improved in some universities.

2.3 Funded activities in information literacy

Very early from 2000 the BMBF ministry supported an information literacy project called LOTSE (Library Online Tour and Self-Paced Education, http://lotse.uni-muenster.de) of the University and State Library Münster. It gives users an overview about all areas of searching and handling scholarly information and was created with the Swedish Educate project and its website Into Info as a guide (http://educate.lib.chalmers.se/). LOTSE is now in further development by a consortium of libraries with a range of subjects from for example electrical engineering, history, physics and medicine to social sciences and economics.

Later from 2004 until 2007 the BMBF supported a second project in the area of information literacy, the joint project BibTutor. BibTutor (http://www.bibtutor.de) has been developed together with the university libraries Darmstadt, Hamburg-Harburg, Heidelberg and Kaiserslautern and the software company Brainbot Technologies in Mainz under the leadership of the German Research Center for Artificial Intelligence (DFKI) in

Kaiserslautern. It supports and facilitates searching in library catalogs and databases adapted to the need of the user and to the context. BibTutor offers learning possibilities and suggestions to promote the information literacy of the user. In addition to support the selection of databases through an interactive BibTutor module which gives orientation about information systems offered, BibTutor gives context-specific advice at the point of need when the user searches a specific database interface. Oriented at the "micromoment" of searching, it also offers context-specific, just-in-time (e-)learning, through further information modules or linking to external learning modules like online tutorials as DISCUS or LOTSE. When searching via BibTutor the user automatically gets hints concerning misspellings, handling or syntax errors. If required, alternative search terms or in some cases terms of the controlled vocabulary of the database used are offered. All this is now part of the development of so-called next-generation catalogs in the Web 2.0 and the idea behind BibTutor to support and "teach/reach" the user in the real context will survive the BibTutor prototype.

Through funding by the German Research Foundation (DFG) the University Library Constance build up a comprehensive source of materials to support information literacy education (Dammeier, 2006). In form of slides, proposals for assignments, and a complete syllabus the project offers a model for a stand-alone information literacy course for bachelors.[6] As part of the project the Constance University Library offers a series of online tutorials to complement the syllabus and which are offered via the e-learning platform ILIAS. All materials are licenced with a Creative Commons Licence what is worth emulating. Until 2007 the Constance University Library has made a further project on the practice of information literacy for advanced students in connection with Chinese partners (Franken, 2006; Kohl-Frey, 2007).

2.4 Online tutorials on information literacy

Although activating, learner-centred teaching methods have been developed also in German libraries, the problem to reach masses of students is still in need of solving. The personal development for librarians in the education area has to be planned strategically. In information society today the methods

[6] For more look at http://www.ub.uni-konstanz.de/bibliothek/projekte/informationskompetenz.html, retrieved December 10, 2007.

for promoting information literacy have to consider the electronic environment. To complement in-class instruction activities there has been a growing need for an online tutorial. The last paragraph already mentions the activities of the Constance University Library.

Raising awareness of information literacy and giving a general orientation to searching databases are the key goals of the bilingual tutorial DISCUS (Developing Information Skills & Competence for University Students, http://discus.tu-harburg.de) of the University Library of the Hamburg University of Technology (TUHH). In German and English DISCUS also gives a subject-specific orientation and includes interactive and task-oriented elements, with special emphasis on the visual appeal of the tutorial's interface. In addition to having something like a landmark for the promotion of information literacy, the most important reason for the TUHH library to do an e-learning project like DISCUS was a strategic one: To make the library part of the e-learning discussion within the university and to be visible as a library when building up a new electronic infrastructure. In DISCUS the user of databases and digital libraries is regarded as an 'information player' who plays with databases and search terms to improve research results. So DISCUS offers a playful and explorative way of transferring information skills. Nevertheless it is very difficult to create exercises which are fun, make sense and are challenging like the 'Boole's Restaurant' which is part of the tutorial. DISCUS draws heavily on searching information in an online world from a classical librarians point of view (Bieler, Hapke & Marahrens, 2005).[7]

A further tutorial by the TUHH library, VISION (VIrtual Services for Information ONline, http://www.vision.tu-harburg.de), is on research methods and writing scholarly papers to complement DISCUS. VISION supports reflection about the set of problems concerning the production of information like reading, writing and publishing and also picks out as a central theme aspects like the journals' crisis, open access and intellectual property. Methodically significant for VISION are the different means of visualising its content as well as the inclusion of emotional and theatrical elements (Bieler, 2007). It is no comprehensive tutorial about research methods but should raise awareness and lead to further resources in form of

[7] See also the database PRIMO (Peer-Reviewed Instructional Materials Online) at http://www.ala.org/apps/primo/public/search.cfm where DISCUS was selected as website of the month in August 2005: http://www.ala.org/ala/acrlbucket/is/iscommittees/webpages/emergingtech/site/august2005.cfm.

lists of books and links in web 2.0 environments, like Librarything and social bookmarking services. Both projects received funds from the Federal State of Hamburg through the E-Learning-Consortium Hamburg (ELCH) via the Multimedia-Kontor Hamburg (MMKH).[8]

In North Rhine-Westphalia a basis tutorial has been developed which offers comprehensive, but lean and not animated content in all areas of information literacy (Schirra, 2007).[9] Other libraries like these in Constance mentioned above and also in Düsseldorf (Hauschke & Ullmann, 2006) include information literacy tutorials in existing learning management systems.

2.5 Information literacy activities outside university libraries

There are also activities in many other layers of the German educational system, especially concerning schools as well as adult education. Dannenberg & Haase (2007) developed a manual for becoming a teaching library for one-person libraries. For Holger Schultka (2007) of the university library in Erfurt each library has to offer educational services for a broader public, and he claims for an own library pedagogics. In its activities the university library of Erfurt cooperate with high schools as well as public libraries.

In 2005 the annual meeting of the German Society for Information Science and Information Practice (DGI), a German society for information scientists and specialists (http://www.dgd.de/), had the motto "Overall concept Information Competence". Information literacy is here in most cases understood as the key competence of information specialists or information brokers. Also actors from university departments which are responsible for the education of librarians and information specialists, often understand the term in this way. Nevertheless a growing awareness can be noticed to include the subject "conveying information literacy" into curricula for the education of librarians and information specialists, including academic instruction to create didactical competence for teaching librarians.

Concerning research activities within the area of information literacy in Germany this is done in most cases by library professionals. In Germany until now there seems to be nobody in library and information science departments in higher education who deals explicitly with information literacy, who has

[8] http://e-learning-hamburg.de/, retrieved December 10, 2007.

[9] http://www.informationskompetenz.de/regionen/nordrhein-westfalen/online-tutorial-informationskompetenz/.

made substantial research in this area or who plays a key role in this subject like in other countries, e.g. Christine Bruce in Australia or Susie Andretta and Sheila Webber in Great Britain. But more and more master theses on information literacy have been done and published, e.g. (Hütte, 2006), who gives an excellent overview in German language about the German information literacy development,[10] and there are also doctoral theses on the way (Ingold, 2005a). Also outside library and information science there can be observed a growing interest and research in information literacy.[11]

3. Between Dewey and Dewey - Information literacy 2.0

Information systems change and so has to change information literacy. In former times the information system and the user were strictly divided: The user send a search request to the system, the system answered with a list of hits. Sometimes in between there acted a human information specialist like a librarian. With systems for example like Amazon the information system learns from user input and the answer of the system is influenced by the searches of former users. In the world of social software the "users" or now better "co-producers" take part in building up the content of the information systems like weblogs, wikis etc. Users do learn from the system like before but they also learn from each other through the system which is now also a communication system.

Most information literacy instruction approaches in Germany are grounded in a librarians' viewpoint (Ingold, 2005a), for which the first Dewey in the title of this section stands for, the American librarian Melvil Dewey (1851-1931) who developed the decimal classification and in whose writings early views about the teaching role of librarians can be found. The emphasis on information literacy here lies in searching of information and learning with information. This concept of information literacy still predominating in German libraries has to be critically questioned, not only because of the changing role of the user in information systems of the Web 2.0. More than efficient retrieval and navigation strategies, information

[10] See also Brunner (2007, pp. 10-31) for more on the history and development of information literacy in Germany.

[11] This is especially true for the subject media information technology and educational sciences, see (Ballod, 2007) and (Hochholzer & Wolff, 2006).

literacy today includes the creativity to organise and shape one's own information and learning process in a conscious and demand-oriented way.

The other Dewey, John Dewey (1859-1952), an American educational philosopher, stands for metaphors like "learning by doing" and an experience-based and democratic learning (Elmborg, 2006). Information literacy in this view means in addition to the former view seeing information literacy as an activity to promote reflection and learning about information. It includes a more holistic view on information literacy as an important part of learning as well as learning information literacy by practical experience "on the fly". In respect to this, issues like intellectual property, coping with information overload or problems in privacy, which are for example caused by the Web 2.0, have to be important parts of information literacy activities. In a world of "cut and paste" the use of citation rules and avoiding plagiarism are issues of information ethics. Economical and political questions within the information process like authors' rights and open access have to be picked out as a central theme. It is necessary to rise awareness about the quality of information and its sources as well as to create an understanding about ways and mechanism of publishing and information circulation. Information literacy 2.0 is a "learning experience" (Lupton, 2004) in a time where informal learning becomes always more important. Information literacy 2.0 includes not only learning with information but learning about information and knowledge.

The term "information literacy 2.0" (see Figure 1) challenges the library based concept of information literacy mentioned above. In the world of the Web 2.0 this view has to be changed (Hapke, 2007a). The view on information literacy 2.0 does not centre in social software or technology but in giving information literacy another, more critical perspective.[12] The user is seen not as a customer, but as a co-producer; education is not a transfer of information and knowledge but a process to create an ability of reflection and a critical awareness; the library is not a warehouse of information but a place for individual and collaborative experiences and learning.

[12] Some of this draw heavily on insights taken from readings of authors of the international information literacy movement such as James Elmborg, Barbara Fister, Cushla Kapitzke and others. See Hapke (2007a) for more detailed references. In addition these views are also influenced by many discussions within the Working Group Information Literacy of the Common Library Network (GBV) in Northern Germany.

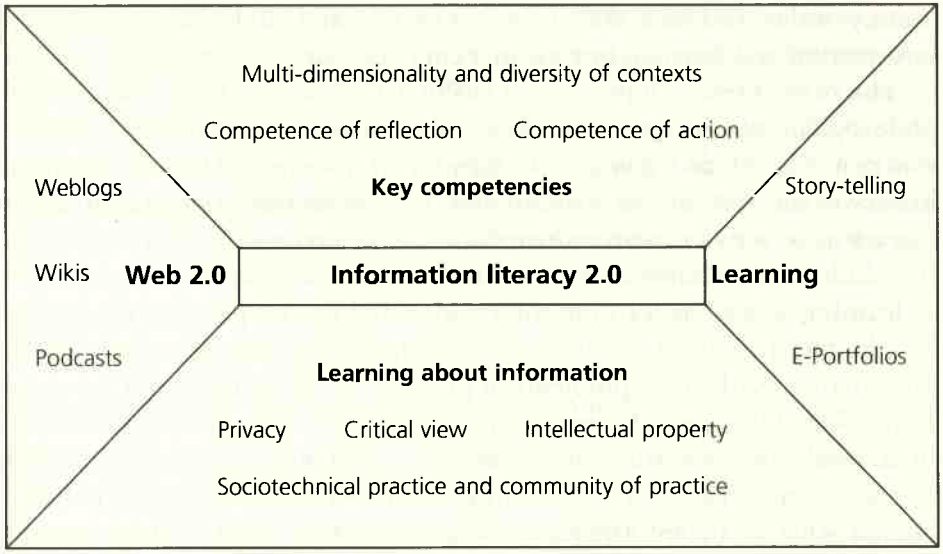

Fig. 1: Information literacy 2.0

A holistic view on information literacy emphasizes the diversity of views on information literacy. In addition information literacy is one of many other key competencies, which are necessary for a life-long learning process. A whole bunch of important competencies and "new literacies" are discussed and available in the modern digital world: digital literacy, media literacy, interdisciplinary competence, intercultural competence etc. So, it may be good to look at information literacy also from a non-librarian view, e.g. from business, in which information overload for example is a key challenge (Ingold, 2005b). Until now in Germany information literacy is not used as an umbrella term for the key competence in a digital society like it is often used in other countries.

4. The library in the learning environment

Promoting information literacy today have to be part of the strategy of the whole library. In Germany most activities in information literacy are a by-part of the normal library service. The whole library services have to be changed in the direction to promote information literacy. What can reference service do for this goal? How to change the catalog? One idea may be

including Web 2.0 features to made it possible for the user to collect their personal database of selections. In addition to aiming at an information-literate university (Webber & Johnston, 2006) we have to create the information-literate library. Universities have to combine their strategies for the improvement of learning and teaching with their concepts for the service departments including the libraries.

At the Hamburg University of Technology activities in building online tutorials led the library to be a constitutional part of e-learning. A peer group of the university in which the library played a strong role developed a strategy plan for the development of e-learning which includes a chapter about the learning facilitating role of the library (Rohling, 2007). It is important to make the library visible in the e-learning environment through integrating library services and learning management systems (Hapke, 2005, 2007b). It is also important to facilitate the creation of information products by the patrons themselves, e.g. by creating services for digital consulting (intellectual property) and services for digital production. Again information literacy deals not only with searching and processing information but also with having the abilities to use information environments like social software or learning management systems to produce information and learning objects by learners as results of their own learning. Active information literacy in the sense of competencies and abilities for information use, information production and publishing is necessary (Tappenbeck, 2006). For this last point the Learning Resources Center in Göttingen is one German example. Also the concept of an information or learning commons which grew outside Germany has to be considered as an important development for German universities (Hapke, 2005).

Most learning management systems are still orientated to study courses. What is needed are places for learner expression, e.g. electronic portfolios, a form of learning diaries, whose importance were early emphasized by Roes (Roes, 2001). Learning management systems have to change and add possibilities for such personal learning environments. The Web 2.0 eases their realisation (Attwell, 2007). The work with weblogs and wikis corresponds with modern views of constructivist learning. Using and especially creating own weblogs can have similar advantages for learning like learning diaries and research log-books which have been recommended for a long time by researchers in academic instruction.

The term 'teaching library', which is quite popular in Germany, is to question. The author prefers 'learning facilitating library' instead, which can surely also contain teaching but not alone. But to remind: good teaching

today means facilitating learning. Learning today in its best sense means mainly co-producing, collaboration etc. It is important that the student does not learn through teaching but through taking part at researching. For the author of this paper the metaphor of calling the student a 'customer' was challenged by the statement of a president of a small German university in 2006 who claimed not to watch students as customers but as co-producers, which clearly correspondents to the Web 2.0 world.

A learning facilitating library offers its customers - in addition to the physical library as an important place for learning - consulting services as well as possibilities for their customers to change and broaden their repertoire of experiences when searching and finding information (Pilerot, 2003). Our customers are very different as learning types. To address the "teachable moment" (Block, 2003) of customers as well as to address the full complexity of information literacy, it is necessary to offer a wide and diverse range of activities to promote information literacy and reference: one-off sessions in-class or outside of class, online tutorials, just-in-time-support as virtual reference, an informative library website, face-to-face meetings, newsletters via email, bookmarks, leaflets etc.

From a libraries' point of view, it is important to watch the student as customer who gets the best possible service from the library, but it may be also challenging to see the student as a co-producer and not as a user (of a library or of an information system). The term 'user' of information systems was correct clearly for the past, but the information systems of today, like wikis, blogs etc., were produced together by their 'users' which are now co-producers of the information system. The role of the library in this world may be the role of the trusted user (co-producer). Libraries will have an excellent future when librarians become co-producers, facilitators and "more critical commentators, mediators and mentors - perhaps nomadic intellectuals and cultural tourists - rather than traditional archivists and monitors." (Luke & Kapischke, 1999, p. 476).

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JOINED PLANNING AND DEVELOPMENT – CUSTOMIZED SOLUTIONS: THE NORTH-RHINE-WESTPHALIAN NETWORK ON INFORMATION LITERACY

*Annemarie Nilges**

Abstract

The aim of this paper is to show that highly efficient customer oriented best practice models for the teaching of IL can be achieved through cooperation.
In Northrhine-Westphalia (NRW), the most densely populated German federal state, teaching information literacy has been a cooperative initiative since as early as 2002. Seeing the Bologna Process and the extensively discussed Stefi-Studie (http://www.stefi.de/) - a study on the acceptance of modern information media by academic users - as fertile means of promoting corresponding library services within the different academic institutions, the steering groups of academic and polytechnique libraries (AG UB and AG FHB) decided to set up a stand-by committee for the promotion and development of all aspects of IL, the so-called AG Informationskompetenz. Its main tasks are:

- Development of best practice solutions for IL with regard to different types of academic infrastructure after critical survey of theoretical approaches in information science
- To give recommendations and develop standards
- Efficiency in all aspects of IL (human resources, rooms, teaching devices, marketing, sharing of teaching materials etc.)
- Education of teaching librarians
- Curriculum design, esp. with regard to B.A. and M.A.
- Benchmarking
- Cooperation with national and international IL initiatives.

In order to achieve these aims, a network of multipliers in each of the more than 30 member libraries was installed. It consists of active teaching librarians that initiate and enrich discussions in the committee and carry information and results back to their colleagues in the respective libraries.

* ULB Düsseldorf & AG Informationskompetenz NRW, Düsseldorf - Germany

Thus best practice models according to cooperatively developed standards and recommendations, but specified with regard to the individual infrastructure of the academic institution are emerging.
Up to now, the following recommendations, standards and devices for the promotion of IL have been created in NRW:

- Recommendations for curriculum design
- Standards for staff, class-rooms and equipment
- Education of teaching librarians
- Workshop on B.A. curricula
- Establishing a platform for the exchange of information and teaching materials (http://www.informtionskompetenz.de)
- Glossary for terms used in IL: http://www.informationskompetenz.de/glossar/
- Online-Tutorial IL: http://www.informationskompetenz.de/regionen/nordrhein-westfalen/online-tutorial-informationskompetenz/
- Benchmarking and statistics
- FAQ questions with regard to IL and Bologna Process (recent project).

1. Introduction

In North-Rhine-Westphalia (NRW), the most densely populated German federal state, teaching information literacy has been a cooperative initiative among academic libraries since as early as 2002. Up to then, academic libraries were more or less active with training students and researchers in the usage of library, catalogues and the first emerging databases in an object-oriented way. The increasing possiblities of the internet and the more or less overwhelming electronic media on offer, however, made a different approach to user education necessary. Instead of informing on particular databases or the local library, libraries started to focus on teaching structural skills and competences that, once acquired, can be adapted to the whole of the information process regardless of the subject in question. Both the Bologna Process and the broadly discussed German *Stefi-Studie*[1] - a study on the

[1] SteFi: Studieren mit elektronischen Fachinformationen. Ein Projekt der Sozialforschungsstelle Dortmund im Auftrag des bmft. 23.6.2003. Retrieved October 10, 2007, from http://www.stefi.de/.

acceptance of modern information media by academic users – provided the academic libraries with valuable arguments for promoting corresponding services within their academic institutions. Therefore, as early as in 2002, the steering groups of university and polytechnique libraries[2] in NRW decided to set up a stand-by committee for the promotion and development of all aspects of information literacy, the so-called AG Informationskompetenz.

Whereas in the Anglo-American tradition the term *information literacy* is very comprehensive and politically and sociologically influential, equalling literacy in a book dominated world and information literacy for life in the information society, the German speaking countries did not translate the term literally, but went for the practical side of it. Rather than sharing all of the theoretical background, they chose the semantically slightly different *Informationskompetenz*[3], instead.

Consequently, the main objectives of the AG Informationskompetenz are

- To develop best practice solutions for the teaching of information literacy with regard to different types of academic infrastructure
- To give recommendations and develop standards
- To professionalize and to increase efficiency with regard to human resources, class-rooms, teaching devices, marketing, sharing of teaching materials etc.
- To educate teaching librarians and to upgrade their skills continually
- To design curricula for the teaching of information literacy
- To evaluate and to organize benchmarking
- To cooperate with similar national and international initiatives.

In order to achieve these aims, a network of multipliers in each of more than 30 member libraries was installed. It consists of active teaching librarians that initiate and enrich discussions in the committee and carry information and results back to their colleagues in their respective libraries. Thus, best practice models according to cooperatively developed standards and recommendations, but mirroring the individual infrastructure of the different

[2] AG UB and AG FHB within the Verband der Bibliotheken des Landes Nordrhein-Westfalen e.V.

[3] Cf. Thiel, A., & Nilges, A. (2004). Informationskompetenz im Wandel: Theorie und Praxis. In *Jahrbuch der Heinrich-Heine-Universität* (pp. 513–529). Düsseldorf. Electronic version retrieved October, 31, 2007, from http://www.uni-duesseldorf.de/home/Jahrbuch/2003/PDF/NilgesThiel.pdf. For the sake of stylistics, both terms are used synonymously with in the context of this paper.

academic institutions are emerging. In 2005, the AG Informationskompetenz and its network of multipliers presented their work during the most important German library conference, the Deutscher Bibliothekartag at Düsseldorf. In a cooperatively designed poster presentation[4] in white-grey-black, different aspects of information literacy as cooperative venture were highlighted. The first cooperatively realized products were presented in a conference paper[5] and demonstrated in various practical sessions. Since then, the AG Informationskompetenz has always profited from the Bibliothekartag to inform the majority of German librarians on new developments and projects in information literacy in NRW.[6]

2. Achievements: Variatio delectat

Up to 2007, the following recommendations, standards and devices have been created and implemented into library practice in NRW:

2.1 Recommendations for the content of classes and curriculum design

The first thing the AG Informationskompetenz tackled was to achieve an agreement on the contents of classes for information literacy. In cooperation with subject librarians of the member libraries experienced in teaching, topics for different subjects were selected and arranged according to their importance to students at different levels of their formation. Freshers for example need no special information on interlibrary loan and document delivery. Programs designed for them generally focus on the usage of their local libary and library catalogues. Students preparing their exam, however, should be well informed on document delivery, should know their respective databases thoroughly, be aware of virtual libraries, news groups and the additional resources the internet offers etc. Of course, there is a huge

[4] Retrieved October, 31, 2007, from http://www.informationskompetenz.de/regionen/nordrhein-westfalen/bibliothekartag-2005/.

[5] Reesing-Fidorra, M., & Nilges, A. (2006). Informationskompetenz als Gemeinschaftsaufgabe der Hochschulbibliotheken in NRW - eine Bilanz. In Lülfing, D. & Siebert, I. (Eds.), *94. Deutscher Bibliothekartag in Düsseldorf 2005. "Geld ist rund und rollt weg, aber Bildung bleibt"* (pp. 193-204). Frankfurt a. M. (= Zeitschrift für Bibliothekswesen und Bibliographie. Sonderheft 87).

[6] F. e. Vogt, R. (2007). Lernziel Kooperation: Das Online-Tutorial NRW, Retrieved October 31, 2007, from http://www.bid-kongress2007.de/abstracts/abstract_mittwoch_e_learning_vogt.doc.

difference between planning for the sciences and humanities. Whereas students of the latter have to get involved with researching material for their papers quite early during their curriculum, science students start writing papers only towards their exams, and will be perfectly content with the manuals and reference works their respective libraries offer during their first one or two years of academic training. All these aspects taken into account, proposals for curricula in information literacy were published for German Language and Literature, English Language and Literature, Chemistry, Economics, Education, Electrotechnology, Law, Mechanical Engineering, Medicine, Music and Physics[7]. Programs for other subjects can easily be deduced along these lines.

The agreement on the contents of information literacy classes was the first cooperate product of the AG Informationskompetenz and its network of multipliers. Right from the start, however, it became very clear that all products developed in cooperation, would only be "the lowest common denominator". No member library was expected to realize the common solution to the letter because of the diversity of the respective infrastructures. German academic libraries are far from uniform. On the contrary, they offer a rich texture of different university systems, each with a unique tradition and history. The AG Informationskompetenz has always regarded this as a huge challenge and as an important parameter to be taken into consideration with each new project. Whereas all cooperate projects and products to be developed have to be state of the art and of very high quality, room must be left for adaptation to the individual needs of the member institutions. This imminent flexibility is one of the brand marks of all achievements presented here. With regard to the curricula described above, for example, it must be taken into account, that the subjects offered vary from university to university and to polytechnique. Polytechnical libraries for instance can only profit from the classes for Electrotechnology and Mechanical Engineering and have to do a lot of planning on their own – however, only according to the basic principles commonly agreed upon and in constant discourse (if they want) with other member libraries with similar infrastructure.

[7] Schulungsraster: Inhalte für fachspezifische Schulungen. AG Informationskompetenz 2003. Retrieved October 10, 2007, from http://www.informationskompetenz.de/regionen/nordrhein-westfalen/arbeitsergebnisse/.

2.2 Standards for rooms, equipment, teaching materials and staff

After having decided upon what to teach, the logical next step for the AG Informationskompetenz was to set up standards for how to do it, how to professionalize the up to then rather basic teaching practice in the member libraries.[8] Inspired by the standards of the American Association of College and Research Libraries that were translated into German in 2002[9] and consequently became the theoretical basis for Informationskompetenz in Germany, a workshop of the network defined principles and recommendations for the organisation of information literacy activities in North-Rhine-Westphalian libraries, i.e. for all practical aspects.[10] For the first time, libraries agreed on parameters and preconditions for individual teaching library concepts, defined organisational requirements for class rooms and equipment, and fomulated the necessary teaching infrastructure with regard to formation and general attitude of teaching staff. Besides, common strategies for marketing were developed.

The Teaching Library Concept – or nowadays better "Learning Facilitating Concept"– for instance is to be based on the overall concept of the respective university and university library and has to correspond to their respective corporate identiy. It must be agreed upon within the academic community and be integrated into university curricula. Teaching objectives and target groups must be clearly defined and student needs at the different levels of their studies have to be taken into account. All classes are to be evaluated on a regular basis. Based on these principles, the Universitäts- und Landesbibliothek Düsseldorf[11] was the first to develop and publish a Learning Facilitating Library Concept.[12]

[8] Nilges, A., Reesing-Fidorra, M., & Vogt, R. (2003). Standards für die Vermittlung von Informationskompetenz an der Hochschule. *Bibliotheksdienst, 37*, 463-465.

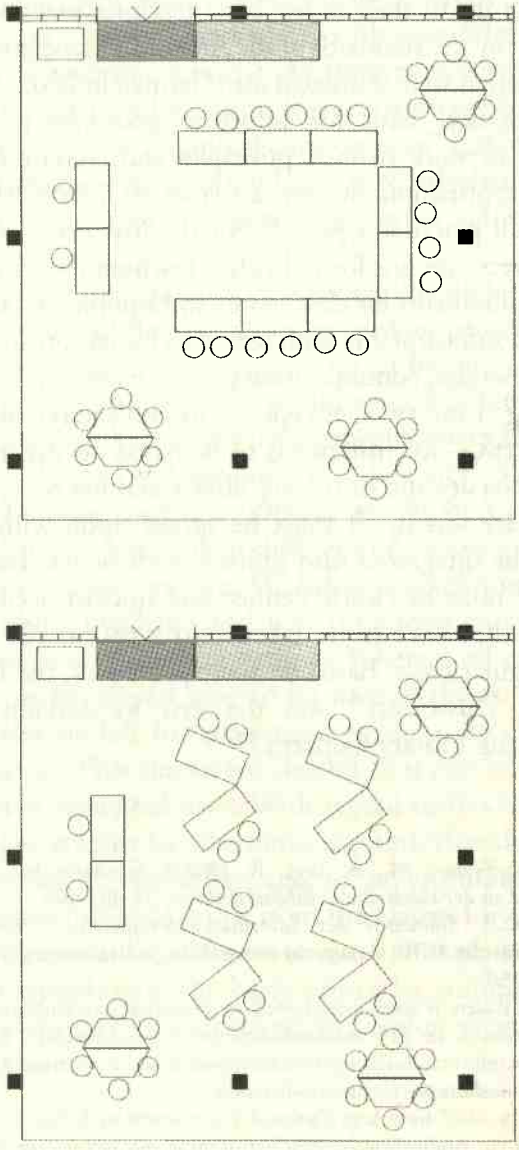
[9] Homann, B. (2002). Standards der Informationskompetenz – eine Übersetzung der amerikanischen Standards der ACRL als argumentative Hilfe zur Realisierung der „Teaching Library". *Bibliotheksdienst, 36*, 625ff.

[10] Later on, the AGIK Baden-Württemberg agreed on theoretical standards in analogy to the ACRL: NIK-BW. (2006). Standards der Informationskompetenz für Studierende. Retrieved October 17, 2007, from http://www.informationskompetenz.de/regionen/baden-wuerttemberg/arbeitsergebnisse/standards-der-informationskompetenz-fuer-studierende/.

[11] Retrieved October 19, 2007 from http://www.ub.uni-duesseldorf.de/home/.

[12] Ausbildungskonzept zur studienbegleitenden Vermittlung von Informationskompetenz. Retrieved October, 17, 2007 from http://www.ub.uni-duesseldorf.de/home/service/lla/ik/ik_ddf. See also Nilges, A., & Siebert, I. (2007). Teaching Library als umfassende Strategie: Das Konzept zur Vermittlung von Informationskompetenz der Universitäts- und Landesbibliothek Düsseldorf hat sich bewährt. *Bibliotheksdienst, 41*, 902-912.

The Universitäts- und Landesbibliothek Münster[13] boasts very sophisticated classrooms for its teaching activities.



[13] Retrieved October 17, 2007 from http://www.ulb.uni-muenster.de/.

It reorganised its classrooms in order to allow for various teaching situations. Whether group work, single work, using personal computers or ordinary teaching situations, everything is possible in its new classrooms for information literacy classes. On the whole, looking back in 2007, it can be stated that all academic libraries in NRW have made huge efforts concerning the local teaching infrastructure. By now, more or less all of them have special classrooms for teaching equipped with various numbers of personal computers and/or beamers at their disposal.

On several occasions, teaching librarians within the country have all been trained in basic teaching techniques and more accomplished didactical theory to enable them to work with all kinds of target groups, from small to very large groups and from grammar school students to post-graduates, senior students or non-university classes. Teaching techniques are constantly evaluated. In 2007 for example, the idea to restrict teacher-based classes to a minimum and to allow for more student activity during fresher general information classes according to the motto "Become curious and start doubting" was broadly discussed among NRW teaching librarians and will change a lot of classes from now on.[14] This new concept seems to be very adequate for grammar school classes and freshers' programs. All network members are familiar by now with the concepts of problem-based learning and situated learning, and use blended learning and e-learning whenever these are necessary.

2.3 Workshop on Curricula for B.A. Curricula

In March 2004, the AG Informationskompetenz organized a special workshop on information literacy in the new B.A. curricula.[15] After Bologna, more or less all German universities started to change their traditional curricula into B.A. and M.A. degree courses. Contrary to the traditional courses that focussed very much on primarily academic purposes, the new B.A. and M.A. curricula have to include the teaching of key competences and

[14] Rockenbach, S. (2007). *Neugier und Zweifel- Informationskompetenz anders.* Retrieved October 17, 2007, from http://www.informationskompetenz.de/materialiendatenbank/.

[15] Workshop Informationskompetenz als Schlüsselqualifikation in den Bachelor-Studiengängen. Retrieved October 17, 2007 from http://www.informationskompetenz.de/regionen/nordrhein-westfalen/arbeitsergebnisse/.

core competences for life long learning, such as information literacy, a good possibility for academic libraries to promote their respective programs.

During the workshop, the member libraries received basic information on structure and purpose of the new B.A.-M.A. degrees as intended by the ministries involved and were then informed on already existing best practice solutions for teaching libraries. The Universitätsbibliothek Freiburg[16] was the first to actively support B.A. curricula in Germany.[17] To most libraries, the participation in this workshop meant new insights into academic structures and new perspectives on the possibilities for libraries to offer their services to their respective academic institutions.

Whereas most academic libraries in NRW were set on integrating information literacy seminars of their own into the curricula in 2004, by 2007 most libraries have come to realize that this means an unproportionally high degree of staff involvement to train a relatively small number of participants, on the whole a not very effective procedure. Besides, term-long classes organised by the library mean additional work because it becomes necessary to correct term papers and organise exams. Therefore, in 2007, most academic libraries try to integrate their classes within regular academic degree courses. If possible, they take on one or two consecutive classes per term per subject, preferably in compulsory courses in order to teach as many students as possible. Libraries are by now campus-wide recognized as competent partners in teaching key qualifications, but need not busy themselves with the time-consuming tasks of academic administration (correcting term papers etc.). At Bielefeld University Library and at Düsseldorf University and Regional Library for instance, more than 6.000 students (i.e. about a third of all students or more or less all freshers) participated in learning facilitating library activities in 2006.

Nevertheless most libraries still continue to offer one or two programs of their own organised by themselves, mostly for political or strategical reasons. The focus, however, has clearly shifted from independent teaching to sharing curriculum responsibility with the rest of the university. At the same time, the contents of the classes is changing from information literacy to information

[16] Retrieved October 17, 2007 from http://www3.ub.uni-freiburg.de/.

[17] Sühl-Strohmenger, W. (2004). *Der Optionalbereich in den Bachelor-Studiengängen der Universität Freiburg und die Rolle der Universitätsbibliothek.* Retrieved October 17, 2007, from http://www.informationskompetenz.de/regionen/nordrhein-westfalen/arbeitsergebnisse/.

and communication technology literacy, or *functional literacy* with the learner becoming the co-producer of information.[18]

2.4 The Information Literacy Platform

Libraries can only enlarge their teaching activities in a cost and staff efficient way and make attractive offers to their respective universities by sharing information materials and cooperating in designing new key qualification courses. Due to the difficult budgetary situation of most German universities and polytechniques, it would have been illusionary to expect the authorities to provide for more staff or enlarge library budgets. All activities had to be realized within the very restricted financial environment and with the same human resources. Therefore, it seemed the best solution to start a cooperative platform for the exchange of useful papers and teaching materials of all kind to enable library A to profit from the excellent experience of library B in a certain area of expertise. This platform, which was originally inaugurated and cared for by the Universitäts- und Landesbibliothek Bonn[19], soon became the central web site for all aspects of Informationskompetenz for the whole of Germany, especially for libraries in Bavaria. The Universitätsbibliothek München[20] took over from Bonn in 2006 and in cooperation with a working committee with members from libraries all over Germany including several members of the NRW network relaunched and is currently hosting a new cooperatively organized communication platform with the declared purpose to serve all interested teaching librarians.[21]

The platform cares for all aspects of information literacy in offering a database for teaching materials for shared and cooperate use as well as information on what is going on in the global world of information literacy. Besides, it serves as communication forum for various German regions that can use the platform to inform their members, present their working papers, projects and products to the information literacy community. Additionally,

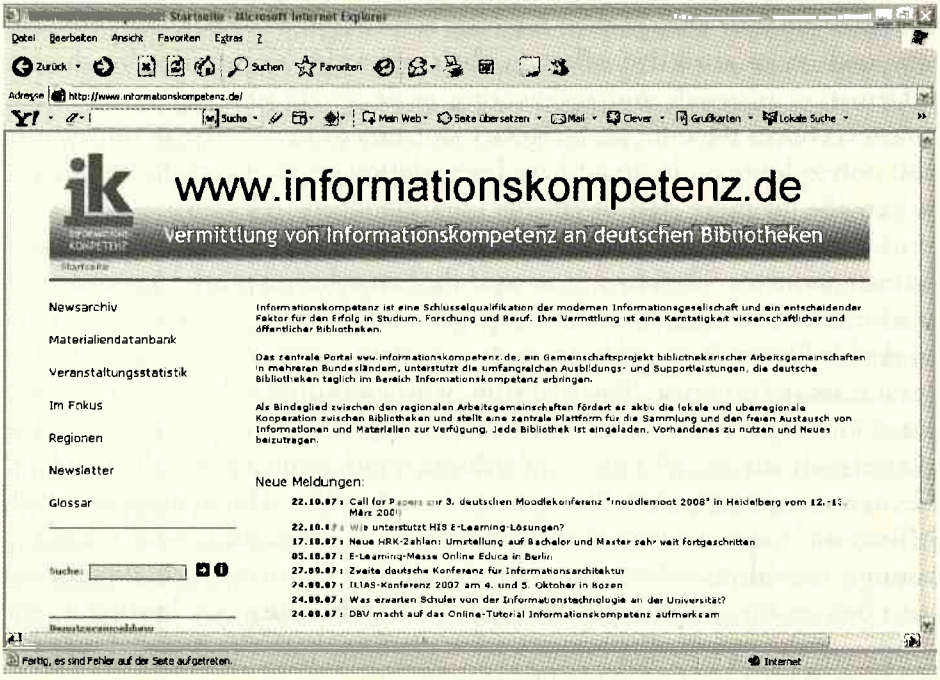
[18] Andretta, S. (2007). Everyone can be an „advanced" learner with information literacy. *Paper given at the Konstanz Workshop on Information Literacy (KWIL).* Soon to be published.

[19] Universitäts- und Landesbibliothek Bonn. Retrieved October 19, 2007 from http://www.ulb.uni-bonn.de/. The ULB Bonn is one of the most active libraries with regard to information literacy in NRW and has enriched the whole movement through considerable input of its staff and particularly of its director, Dr. Renate Vogt, chair woman of the AG Informationskompetenz.

[20] Retrieved October 19, 2007 from http://www.ub.uni-muenchen.de/.

[21] Retrieved October 19, 2007 from http://www.informationskompetenz.de/.

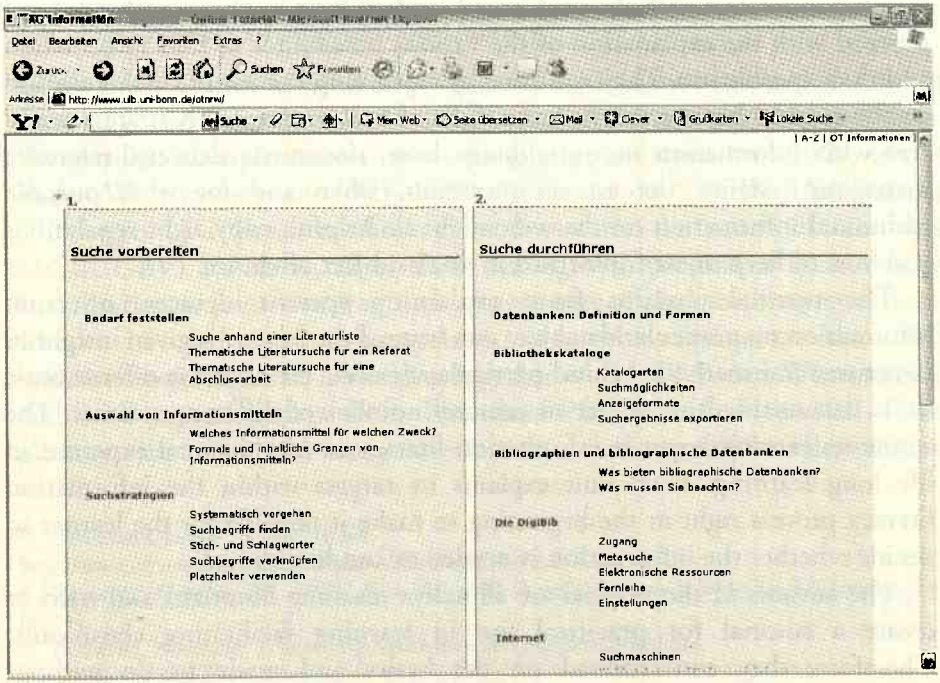
common statistics will be developed and presented. Already, a lot of libraries have indicated their interest in this kind of benchmarking, expecially since the general library statistics in Germany still do not offer sufficient possibilities to mirror information literacy in all its aspects.



Contrary to the first platform, all materials offered on www.informationskompetenz.de are peer group approved and updated on a regular basis. A database offers the search functions necessary for adequate retrieval. Thus, a teaching, or rather learning facilitating librarian faced with the problem of offering a special class on document delivery or a special database that he or she has not yet dealt with very often, can easily inform him- or herself on the platform and adapt a concept or hand-outs, powerpoint presentations or whatever he or she will find in the database to his or her specific needs. The only thing that is required is to mention the "owner" of the original document. Using the platform in this way, has proved to be a very effective and time- and staff saving device, at the same time promoting products of an approved and high quality standard and, in the long run, assuring the same level of high quality teaching in the whole of Germany.

2.5 The Online-Tutorial Informationskompetenz[22]

When setting up its agenda in 2002, the AG Informationskompetenz decided that eventually an online-tutorial information literacy would be needed to enable teaching librarians to deal with large numbers of participants in classroom sessions. Therefore existing e-learning-programs for information literacy for blended learning and self-planned studying purposes were evaluated. Unfortunately, none of the many programs fit the preconditions the teaching librarians had agreed upon. Since activities began to explode and more and more classes had to be realized for very large groups and with the same or even a reduced number of staff very soon, the NRW network decided to begin working on a tutorial of its own. A task force was installed and was able to present a basic online tutorial information literacy in 2006. Because of the very different IT infrastructure of the various cooperating libraries, the technical standards were kept very low. The basic version consists of static html-web sites that can be integrated into all kinds of library environments and thus does not contain interactive elements, animations etc.



[22] Retrieved October 23, 2007, from http://www.informationskompetenz.de/regionen/nordrhein-westfalen/online-tutorial-informationskompetenz/.

Primary target group for the tutorial are undergraduate students of all subjects towards the end of their first year or ideally in the second year of their B.A. degree courses, i.e. at a point of their study where they are already slightly familiar with libraries and their usage and have made their first researches in catalogues and databases. Since students at this level have already become used to self-organized learning as required in academic surroundings, the authors of the tutorial felt free to renounce on a lot of gimmicks such as flash animations and video clips or films. Learning in the tutorial is consequently primarily based on texts.

The tutorial is mainly meant for the use in blended-learning scenarios. Classes with numerous students where practical work is nearly impossible in the classroom need a means of exemplifying, preparing and digesting theoretical information. This is where the tutorial comes in and what its authors had in mind. Nevertheless, the systematic arrangement of the learning unities mirroring the information process, and a detailed navigation bar on the left giving information on the actual location of an enquiry within the system additionally support self-organized learning. The different learning units start with the problems a student faces in choosing a topic and proceed with the explanation of the various possibilites to find information and their specific use. They continue by explaining the use of catalogues and detabases after having taught basic skills of building research strategies and end with information on interlibrary loan, document delivery, reference managing systems, the art of quotation, when and for what purpose additional information on the web might be helpful, copy right regulations and how to keep oneself informed in one's subject of choice.

The tutorial abstains from explaining specific devices, or from information on particular databases etc. Instead the learner is given insight in structures and methods behind particular devices. He or she is offered basic skills that enable him or her to use any number of different systems. The supreme learning target is information literacy as fundamental expertise in life long learning. Each unit explains its targets within the information literacy process right in the beginning to make it possible for the learner to decide whether the information is needed or can be skipped.

The authors of the tutorial are all active teaching librarians and tried to create a tutorial for pracitical use in learning facilitating classrooms. Therefore, they concentrated on the basics and made to do without superfluous, or even complicating unnecessary information. Where definitions or further examples are required, they are always offered on

additional sites. It's up to the learner to decide how much information he or she wants and needs at a given point.

In the meantime, the tutorial which is offered via the so-called Digitale Bibliothek NRW, the North-Rhine-Westphalian union catalogue and databases platform, has been adapted by a lot of libraries within the federal state and throughout Germany. Students estimate its simplicity of structure and language. They are well pleased not to have an overload of technical features and possibilities, but well arranged screens and straightforward information.

Some libraries as the ULB Düsseldorf that took part in the task force used the texts for a tutorial on a learning platform of their own.[23] The Fachhochschulbibliothek Gelsenkirchen integrated the complete tutorial into its execellent teaching library program.[24] So did the Fachhochschule Niederrhein.[25] Others, especially small libraries, use it in its original form. All of them, however, dispose of a highly potent tool for teaching information literacy they would not have been able to realize on their own, but can now offer as an additional library service through cooperation.

2.6 The Glossary of Information Literacy[26]

While the AG Informationskompetenz was the first institution of its kind in Germany, more and more federal states followed the North-Rhine-Westphalian example and set up working groups of their own. 2007, one in Baden-Württemberg one (NIK-BW), a Bavarian one (AGIK BAY), one in Thüringen (AG Benutzerschulung) und one for the north of Germany (AGIK GBV) are active, all of them dealing with projects of their own or contributing to joint ventures, such as a glossary of the most frequently used terms in Informationskompetenz. In this project, the AG informationskompetenz is working together with NIK Baden-Württemberg and with representatives from Rheinland-Pfalz.[27] A first version of the glossary was ready for cooperate use by summer 2007. The idea in

[23] Retrieved October 24, 2007, from http://www.ub.uni-duesseldorf.de/home/service/lla/dot/mat/index_html.

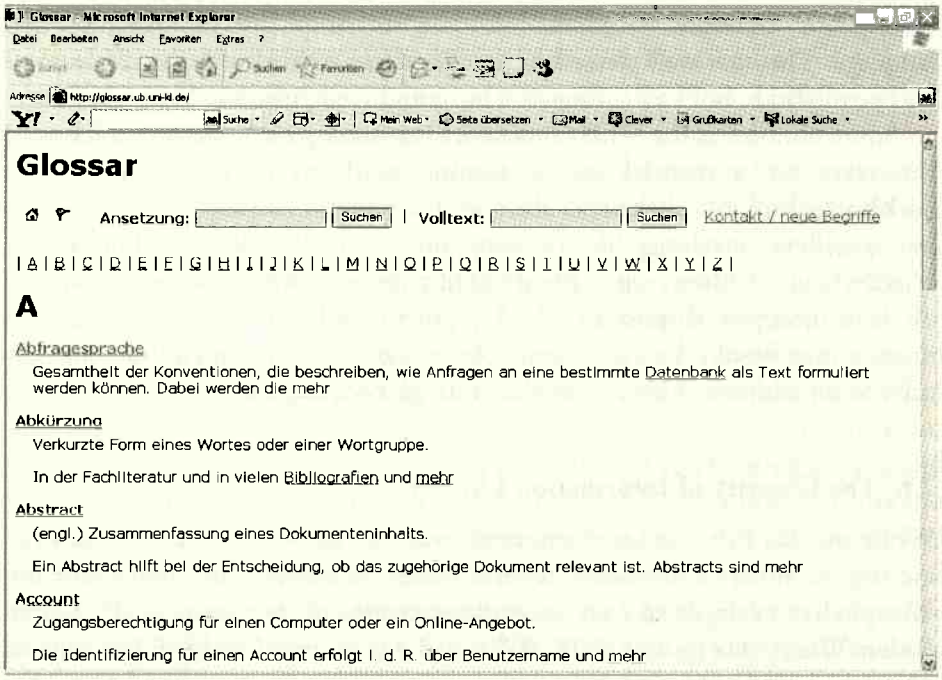
[24] Retrieved October 24, 2007, from http://hb.fh-gelsenkirchen.de/FH-Sites/ZIM/index.php?id=244.

[25] Retrieved, November 5, from http://ptah.hsnr.de/tutorial/tutorial.html.

[26] Glossar zu Begriffen der Informationskompetenz. Retrieved October 25, 2007, from http://glossar.ub.uni-kl.de/.

[27] Rheinland-Pfalz is a very small federal state with few libraries and generally shares either projects in NRW or Baden-Württemberg.

establishing the glossary was, that most libraries need such a tool to explain terms within different contexts, i.e. on the web sites dealing with information literacy or similar library services, in virtual libraries, and last not least as part of their online-tutorials.



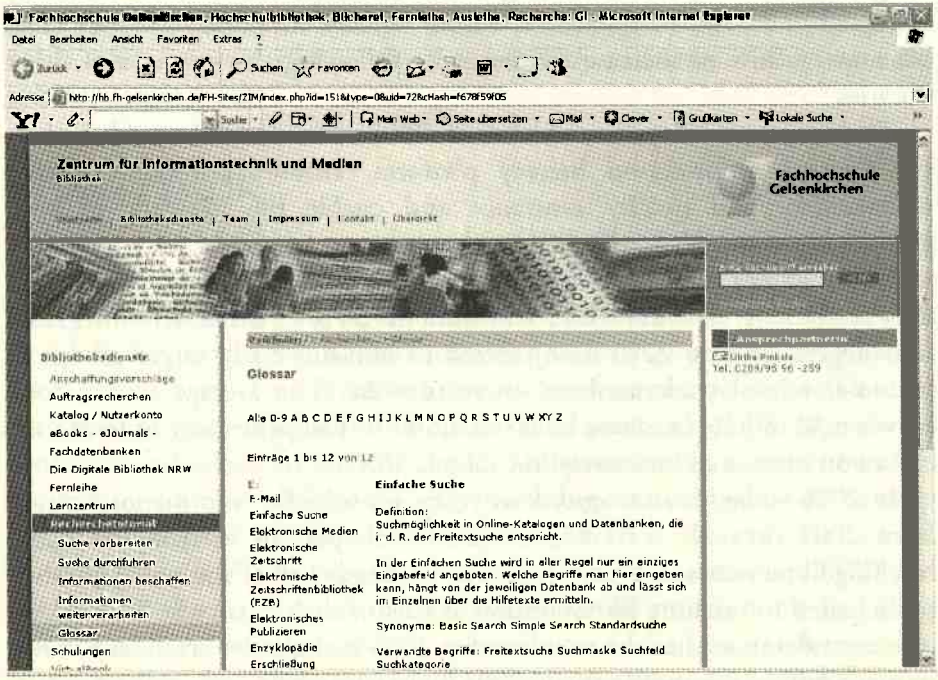
The glossary is in German, English synonyms, however, are indicated. Terms are arranged in form of a thesaurus, i.e. a short definition is followed by a very expressive example (where necessary) and synonyms, top and related terms. New terms can be proposed by anyone, and will then be taken into account by a standing committee with members of the original working group.

In a next step, an English version of the glossary will be developed. This seems to be necessary, because in more and more universities and especially polytechniques, the number of courses taught in English are increasing. There are high numbers of foreign students on German campuses profiting from the liberal education possibilities inaugurated after Bologna.

The working group ist still looking into possibilites of translating the existing glossary or creating the English version in collaboration with native speakers, preferably Anglo-American teaching librarians. Should this be realized, it would

be the fist international project for the AG Informationskompetenz.

As in the case of the Online-Tutorial, the glossary is also meant for various usage in different infrastructures. The FHB Gelsenkirchen and the Fachhochschulbibliothek Niederrhein already mentioned above for example have integrated the glossary into their library reference tools.



Other libraries, as the ULB Düsseldorf are about to integrate the glossary into their version of the online-tutorial. The members of the working group for the glossary were in part identical with those of the online-tutorial NRW, therefore the usage of the glossary for the cooperative online-tutorial was agreed upon right from the start.

2.7 Benchmarking and quality management

Since the network of multipliers of the AG Informationskompetenz consists of about 30 libraries representing very differently structured universities, benchmarking for the whole of the group is not so easy. There are just too many differences between the libraries. Nevertheless, common statistics were

agreed upon and published yearly within the community, but never outside of it. The idea was to encourage libraries with comparatively low results to consult with the obviously more efficient ones, but to protect them against unqualified judgements of for instance their university administration. This rule will be applied in the present context, too, i.e. only cooperate results will be given. Within the networking community, all results are extensively discussed and a lot of discussion within equally structured libraries takes place as to how to increase efficiency by following the example of other libraries.

The cooperative statistics, which from 2007 onwards will be published via the German information literacy platform, ensure continuous quality management and quality assurance and enable the network to keep comparable standards in the different institutions.

In the winter term 2004, the North-Rhine-Westphalian libraries taught 20.444 students in 1.217 classroom sessions. 34% of these were integrated into degree courses, 22% were offered to non-university target groups as grammar school students, local enterprises etc. The average session took between 30 minutes and one hour (about 600). The percentage of term-long classes on offer is still relatively low (about 50).

In 2006 – the libraries agreed on yearly statistics for information literacy from 2005 onwards – 51.173 students took part in as many as 3.282 teaching library classes. 21.265 students, i.e. nearly half of the whole number, participated in teaching library classes as part of their curricula. Even taking into consideration that the numbers for 2006 include the activities for two terms, whereas the numbers for 2004 only cover half a year, the result is impressive. There is an important increase in both aspects, number of participants and number of class-room session. Besides, the primary goal, to integrate as many teaching library classes as possible into degree courses, could be realized for 1.148 classes, the majority still being single events of 60 to 90 minutes. Still only relatively few term-long library classes are taught.

In the winter term 2004/05 22 libraries of the network participated in an evaluation scheme. At the end of each class, the learners were asked to fill in a questionnaire the AG Informationskompetenz had developed together with its multipliers during the winter workshop in 2003 and professionalized with the help of the well-known Institut of Angewandte Sozialwissenschaften (infas). The result based on roughly 4.000 questionnaires was that on the average the mark given by students, university teachers and reserchers and non-university target groups was 1.8 (1 being the best, 5 the worst on a range

from 1-5). University teachers and researchers were slightly more generous in their marking (1.5), students less so (1.7) and externals only marked with 2.1. The reason for these different degrees of satisfaction can probably be seen in the degree of familiarity with the offer. Most teaching library classes are made for students and are developed in discourse with university teachers. Therefore, university teachers and researchers can easily identify with the contents, whereas for instance grammar school pupils don't see their special needs taken into account as much as probably necessary if they were the primary target group.

2.8 Project FAQ IK

Although a lot of German academic libraries are active learning facilitating libraries in 2007, there are still quite a few mainly smaller libraries (polytecnical libraries, big public libraries, institutional or special libraries etc.) left that would like to start information literacy programs but dont't really know how. This is obvious at all conferences, when well-known members of the information literacy community of NRW are always consulted and asked for advice. The AG Informationskompetenz therefore decided in summer 2007 to set up yet another working group to develop Frequently Asked Questions in Information Literacy. The main task of the working group will be to provide an overview over best practice in NRW and the rest of the country, to gather additional information by including international publications, and to come to conclusions as to what can be recommended for every aspect of Informationskompetenz in German libraries from the development of strategical papers and library and university concepts, over organisational questions (rooms, equipment, staff, marketing), the contents of classes, target groups etc. to evaluation and quality management, in short to cover all the areas, wherein the AG Informationskompetenz and its multipliers have proved to be very knowledgeable and competent.

3. Conclusion: Quo vadis Information Literacy?

From the beginning of the second millennium, the focus within the theory of information literacy has subtly changed from an object-oriented approach to the teaching library to learners' needs. It is about time, that teaching librarians

start being teaching facilitating librarians and accept the learner not only as their target group but as their partner on equal footing in the information society. Customized solutions of the type the AG Informationskompetenz NRW has been developing sucessfully over the past 5 years can and have to be optimized by making the end user part of the process of creation, allow him or her to comment, to evaluate, in short integrate him or her into our projects. Let the learners decide when they need what kind of information and let us offer intelligent customer oriented solutions to match these requirements. In the world of blogs and RSS-feeds, of the *Bibliothek 2.0*[28], there are a lot of possibilities to do so to the advantage of all.

[28] Danowski, P., & Heller, L. (2007). Bibliothek 2.0 – wird alles anders? *Bibliothek Forschung und Praxis, 31*(2), 130-136. See also Hapke, T. (2007). Informationskompetenz 2.0 und das Verschwinden des "Nutzers". *Bibliothek Forschung und Praxis, 31*(2), 137-149.

INFORMATION LITERACY AS NATIONAL ASSETS: INDIVIDUAL AND COOPERATIVE ACTIVITIES

*Anthi Katsirikou**

1. Introduction

1.1 Structure of the Greek Education System[1]

Public higher education is divided into Universities and Technological Education Institutes (*TEI*). Students are admitted to these Institutes according to their performance at national level examinations taking place at the second and third grade of *Lykeio*. Additionally, students are admitted to the Hellenic Open University upon the completion of the 22 year of age by drawing lots. It should be outlined that the general overview of the education system with its main aspects being supervised by the Ministry of Education and which form the major part of it. However, a broader analysis shows that the total of the education services provided for in Greece form a much more complex, multilevel and differentiated infrastructure. Moreover, many other educational services, classified or unclassified, are provided for in the formal education system, either in co-operation with it or completely independently.

According to the Greek legislation, public Higher Education Foundations are administratively autonomous. The Rector, the Council, the Faculty Deans, the Chair of the Departments and the Senates, are the administrative bodies which make decisions and take risks on the policy, programming and strategy. Consequently, libraries are departments of the university, dependent of the administration.

Generally speaking, the higher education in Greece goes through a reforming process towards flexible learning systems; so as to prepare students for the continually changed needs of the working market that technological development imposes. Acquisition of competences through information literacy multiplies the opportunities of self-conducted learning from the side of students, while they get involved in the use of a great variety of informational

* University of Piraeus. European Documentation Center, Piraeus - Greece

[1] http://www.ypepth.gr/en_ec_page1531.htm.

sources, which they use in order to expand their knowledge and to improve their critical thinking.[2] The information literacy programs in higher education are a subject matter of the libraries, which organize courses, in collaboration with faculty staff.

2. National policies

2.1 The 3rd Community Support Framework Operational Programme[3]

It signed between Greece and the European Union for the six-year period 2000-2006 is specified as far as the policies related to educational planning within the Operational Program Education and Initial Vocational Training are concerned. The Operational Programme's text is the first O.P. "Education" framework-text, which is the historic text which has formed the basis for the further specification of educational policy in the Programme Complement.

More than ever before the role of human capital has emerged to be a determining factor for the survival and progress of societies. The new environment demands that the educational system trains (young) people capable of meeting new social challenges so that they can integrate unhindered into the active life of the labour market by broadening their knowledge through the extensive use and exploitation of Lifelong Learning. The educational system, being a basic structural element responsible for the formation of future human resources must be gradually transformed in order to answer the new needs and challenges.[4]

The goals and the overall planning of the Operational Program for Education and Initial Vocational Training (O.P. "Education" II) are an integral part of the national education strategy. The Operational Program is conducted parallel to other important actions of institutional nature in the field of human resource development. They are aimed at enhancing both the education provided and the potential for youth to be integrated into the social and productive fibre, promoting equal opportunities, combating social exclusion, raising awareness on environmental issues, and promoting gender equality.[5]

[2] Nikitakis *et al.* (2005).
[3] http://www.epeaek.gr/epeaek/en/a_2.html.
[4] *Ibid.*
[5] *Ibid.*

The policies developed with O.P. "Education" II resources are not segmented. They are based on an integrated plan that involves a sequence of actions related to the integrated educational policy. In this program period (2000-2006) the Ministry of National Education and Religious Affairs, with the experience acquired during the O.P. "Education" I, places particular emphasis on: the quality of the planned interventions, continuous evaluation of actions, the quality of results, their coupling with labour market needs and prospects.[6]

This framework, the O.P. Education II, financed the Greek academic library programs on information literacy and support to lifelong learning. This O.P. "Education II" and the prior one "Education I" (1994-2000) financed the Hellenic Academic Libraries Consortium.

2.2 The Hellenic Academic Libraries consortium (HEAL-LINK)[7]

It is the strongest library consortium in Greece, in which 37 Universities and Educational Institutions, 14 Research Institutions, the National Library of Greece, the Library of the Greek Parliament, the Athens Academy, the Pedagogical Institution, the National Institute of Agricultural Research and the Universities of Cyprus participate. The goals of the consortium are:

- The collaboration, via establishment of common policy, in the subscriptions of journals (printed and electronic) among the members, aiming at the rational growth of collections of journals among the partners, the saving of resources and the access in bigger number of sources for covering the educational and inquiring needs of users of the participating Institutions.
- The creation and operation of the Union Catalogue, that is the common policy on cataloguing, the collection of bibliographic and authority records of the Greek Academic Libraries and the use of its records from each member of the Consortium.
- The joint subscription of electronic sources and services of information, as well as rights of remote access in electronic sources and services of information included the electronic scientific journals.
- The growth and establishment of models for each nature biblioeconomic work.

[6] *Ibid.*

[7] http://www.heal-link.gr/journals/en/about.jsp.

- The concern for the staff development of the member's libraries.
- The collaboration in the disposal of material each participating library via ILL and other methods that they would ensure and facilitate the availability of material among the partners.
- The collaboration with proportional institutions and organisms of interior and abroad for the guarantee of attendance of HEAL-Link in the international evolvements on collaboration of libraries and management of intellectual rights issues.
- The cooperation with relevant organizations both domestic and foreign for the assurance of the participation of HEAL Link in international developments concerning library cooperation and management of copyright.
- The undertaking of each other initiative that promotes and develops the Academic Libraries of Greece via common activities and initiatives.

The consortium has made its decisions about its future activities and applied them to the Ministry of Education, quite early to include them in the new O.P. "Education III". Among the essential goals of the Heal Link is the enhancement of the members of consortium, in order to strength and integrate the more effective cooperative action of the Greek academic libraries. Especially, the next goals are:[8]

- Update of the Union Catalog,
- The development of national standards,
- The development of ILL system,
- The development and the application of quality system measurement,
- The enhancement of the e-resources, that consortium members access,
- The continuing education of librarians and information professionals.
- The enhancement and the empowerment of the consortium, joining more Greek libraries, so that it will transform into the Greek libraries consortium.

In this context, the following cooperative actions have decided and asked for finance:

- Alternative methods of user education.
  The user education programs are the base line for the lifelong learning. They aim to make people autonomous users of information, enable to

[8] Papazoglou, V. (2007).

search effectively, to retrieve, to evaluate and finally to use information ethically and legally. The training includes seminars, "webcastings", videos with written instructions and FAQs.

- Information Literacy Programs.
  They depend on the level of information needs (second cycle - postgraduate students) and the subject of study (e.g. information literacy program for technical university students or for medical students etc.). The creation of these programs prerequisites the collaboration between library staff members and faculty staff and leads to the interconnection of library with the educational process. The collaboration between universities in this project aims to cover the total of subject units effectively, efficiently, in a cost and time consuming procedures. Still, the guidelines of the national policy must be drawn up, as well as the specifications and the best practices for the general and subject information literacy.

Additionally, the establishment of a learning portal is proposed, in order to host the concept of the implementation of the projects and the information literacy programs.

3. Academic policies and Higher Education penetration

An information literate individual is able to: [9]

- Determine the extent of information needed,
- Access the needed information effectively and efficiently,
- Evaluate information and its sources critically,
- Incorporate selected information into one's knowledge base,
- Use information effectively to accomplish a specific purpose,
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

The information literacy includes the essential set of knowledge and skills, with which the independent learning and training outcomes are strengthened. At the same time, individuals have the possibility to become themselves also

[9] ACRL (2000).

producers of information and co-creators of the knowledge society.[10] In this way, people develop also technological skills, through information literacy.

According to international trends and practices, libraries examined the information literacy standards and evaluated them based on the educational and information needs of the specific academic community. The most popular standards are the ones of the Association of College & Research Libraries (ACRL), the ones of the Australian and New Zealand Institute for Information Literacy and from the International Federation of Library Associations and Institutions (IFLA). As referred above, the consortium of Greek Academic Libraries will examine and decide for the national standards of information literacy.

The innovative pedagogy emphasizes a shift from 'knowledge' to 'competence' and from teaching to learning, placing the learner at the centre. Such a shift implies that as early as the pre-primary stage people 'learn how to learn'. Learners should, as far as possible, actively seek to acquire and develop knowledge and competences. Different methods are called for depending on the situation of the learner, the learning facilitator and the setting (e.g. community centres, workplace, the home). Work-based learning, project-oriented learning and learning organized as 'study circles' are particularly useful approaches.[11] In our days the libraries use various approaches for the support of information literacy: a) guides of use of the library, b) autonomous courses, c) the creation of internet courses, d) the online information literacy tutorials, e) the inclusion of the basic information literacy courses to curricula and f) the training to bibliographic references and citations. Most of the universities developed user education and information literacy programmes, which briefly are described below.

3.1 Library of the Agricultural University of Athens[12]

The Library offers seminars to library users (professors, researchers, students, postgraduate students, and staff) in order to train them to the library services. The seminars include:

1. Guided tours to library space and the services, i.e. interlibrary loan, document delivery, acquisitions, audiovisual material, the rules of the library.

[10] Abid (2004).
[11] Commission of the European Communities (2001).
[12] http://library.aua.gr/ekpaideusi.html.

2. Use of library's website.
3. Information retrieval from library's databases.
4. Research to library's OPAC.

The participation to the seminars is a matter of the user, not of the faculties. There is also the possibility for training to other fields, not included above, after personal contact.

3.2 Library of the Aristotle University of Thessaloniki[13]

The aim of the service is to train users (professors, researchers, students, postgraduate students, and staff) to the library services and e-resources. The goal is fulfilled through:

1. Seminars. The training unit of the library organizes seminars to the following issues:
   - Computers and Internet for beginners,
   - Information retrieval (databases, OPAC, e-journals, e-books, online reference works, theses, digital collections, bibliographic resources),
   - Information retrieval to digital resources of the University,
   - Training to RefWorks.

   Seminars are adjusted to the specific needs of users and to the subject specification of them. Every member of the university (academic, research, administrative personnel, students) can attend them.
2. Face to Face assistance, for every user who asks for it. FtF includes information retrieval in databases, OPAC, e-journals, e-books, online reference works, digital collections, bibliographic resources and RefWorks.
3. Online training guides to following issues:
   - Research guidelines,
   - OPAC retrieval,
   - Retrieval to MUSE (website and printed guide),
   - Retrieval to ATLA,
   - OCLC FirstSearch,
   - RefWorks (website and printed guide),
   - Evaluation of Internet resources, plagiarism, references styles,
   - Electronic resources of the University,

[13] http://www.lib.auth.gr/site/gr/training/index.

- CopyPaste or CopyRight: Instructions on the use of the bibliography.
- Digital library of the University: Services and content.

3.3 Library of the Democritus University of Thrace[14]

The library offers guided tours to the library space and instructions, called "Using the library".

The program focuses on the classification of the knowledge, specifically on the Library of Congress Classification System, which the library uses. It also trains people to the subject analysis, in order to acquaint them to the research strategies, to facilitate the information retrieval and to realize the structure of knowledge organization. Afterwards, the training extends to the OPAC, to the bibliographic databases and to the full text databases of the library. The participation to the seminars is a matter of the user, not of the faculties.

3.4 Library of the Harokopio University[15]

The user education aims to train them to use the library's collections, to realize the organization of the library and the services it offers to its user. Another set of seminars is referred to the research strategies and the databases that the university holds. The library focuses on the research outcomes management, as well as on the necessary technological skills and they are given in another course. The participation to the seminars is a matter of the user (professors, researchers, students, postgraduate students, and staff), not of the faculties.

3.5 National Technical University of Athens Library[16]

The library has organized a user education program for students, which includes:

1. Guided tours in the library,
2. Information on its services and collections,
3. OPAC,
4. Bibliographic research.

[14] http://www.lib.duth.gr/.
[15] http://www.hua.gr/vivliothiki/content.php?category=6.
[16] http://www.lib.ntua.gr/newsite/el/gnews.htm.

There is also the possibility of arrangement of specified seminars on the electronic databases of the library. Printed information leaflets are also available.

3.6 Library of the Panteion University[17]

Panteion University library organizes introductory courses aiming to familiarize its users with its holdings and services. These courses apply mainly to new students but may also be attended by any other member of the academic community. Types of seminars and their content:

1. Introduction to Library use.
   The seminar is designed to familiarize new students with the Library operation (learning material, organization and available services). Special focus is given to the OPAC. Seminars are given at the beginning of each academic year after communicating with academic departments. Certain departments have included the seminar at their curriculum.
2. Using electronic resources.
   Attendants get familiar with the Library's website and how to use electronic resources. It concerns all members of the academic community who may apply after consulting the program announced by the Library.
3. Database searching instruction.
   This seminar is given as part of the curriculum of undergraduate and postgraduate studies and provides instruction on database using and searching. It also provides subject-oriented executive assistance. For the moment it is given after personal contact between the university faculty and the Information and Instruction Department of the Library.

3.7 The Library and Information Centre of the Technical University of Crete[18]

The library and information centre of the Technical University of Crete organizes seminars to users (professors, researchers, students, postgraduate students, and staff) aiming to familiarize them with library's services and

[17] http://library.panteion.gr/index.php?sid=QIH9TEG9oliA9XJj5uqoAvq6H56Pf41VgdV1i61wjDxI3CszWD&lang=en&id=22.

[18] http://www.library.tuc.gr/portal/dt#17.

organization, but also to achieve the most effective utilization of the information resources. The seminars are offered not only in the space of the library, but also via the library's website, using a virtual reality project. The participation to the seminars is a matter of the user, not of the faculties.

1. Guided tours to the library.
   This seminar addresses to new coming users who are interested in the library organization and services. It also includes the training to the use of library's OPAC. The seminar is given to groups.
2. Electronic resources.
   The seminar addresses to every user individually who is involved in research procedures. It includes training on the local and remotely databases and on the research strategies, depending on the specific subject interests of the trainer.

3.8 The Library of the Technological Educational Institute of Crete[19]

The seminars addressed to the students are the prerequisite of the issue of the library card. The library administration organizes them and announces the program of the seminars. The seminars concern:

- Organization and operation of the library. Disciplines and rules.
- Training to library's software: OPAC, cd-server, Virtual Learning Environments.
- Research strategies and techniques.
- Access and retrieval to databases and electronic resources.

3.9 The Library of the Technological Educational Institute of Serres[20]

At the beginning of every semester they are conducted Library induction sessions in order to introduce new academic staff and students to Library's facilities, services and collections. The induction sessions helps new members to get familiar with the Library and to be alerted to such areas of interest as how to use the library services, where to find resources to support their studies and how they can get support using the technological equipment of the Library.

[19] http://www.lib.teiher.gr/gr/tmpqaas0txv6w.html.
[20] http://lib.teiser.gr/index.php?id=10.

Subjects:

- Reference department
  1. Print and electronic collections,
  2. Interlibrary loan and document delivery,
  3. Databases,
  4. Print and electronic journals,
  5. Bibliographic and citation standards.
- Circulation department
  1. Circulation rules and procedures,
  2. Library organization,
  3. OPAC, research strategies.
- e-Information
  1. Libraries and Internet,
  2. Grey literature,
  3. Bibliographic databases: research strategies,
  4. E-mail, Internet, search engines, research strategies.

The courses take place in the Library and deliver to the students.

3.10 The Library of the Technological Educational Institute of Thessaloniki[21]

According to its design the online information literacy tutorial consists of five basic modules:[22]

1. Determine the information needs
   This module is designed to help students become capable of a) defining the topic of an essay using key-words, b) locating the suggested bibliography, c) understanding the different types of information sources and publications and d) using the most appropriate type each time.
2. Search and retrieve information
   This module will teach students how to develop effective search strategies and also how to retrieve the needed information from the library's OPAC, databases and the Internet.

[21] http://www.lib.teithe.gr/flang/en/index.html.
[22] Malliari and Nitsos (2007).

3. Evaluate the information
   By the end of this module the students will be able to assess the relevance and the accuracy of the search results, and to refine the search strategy in order to find more accurate results or to change the search tools.
4. Synthesise and communicate the information
   This module is designed to help students a) manage the pieces of information gathered by focusing on key ideas and by detecting possible relationships between them and b) write an essay or an article from scratch and make the final presentation.
5. Proper use of the information
   The last module will help students get familiar with copyright and intellectual property issues so that they will be able to use the information properly, to avoid plagiarism and also to compile bibliographic references according to international standards.

At the end of every module a comprehension test will be available giving the opportunity to students to evaluate their own progress. The recorded results will be emailed to the students and also to their academic supervisor.

The online tutorials focus on the following subjects:

- The catalog of the library, OPAC,
- The Greek journals' Index, Arxeion Web,
- OCLC FirstSearch.

3.11 University of Crete Libraries and Information Service[23]

A department of the library, called Users Information and Education Office, is responsible for:

- The users training and education on library's issues,
- The management of the reference collection, printed and electronic,
- The support of the users to their bibliographic and subject searches,
- The guidance in the use of the electronic tools of library,
- The provision of specialised and reliable bibliographic and other information on the basic knowledge disciplines that are taught in the University, that is to say the Humanities, the Social sciences, Education, Medicine and the Pure Sciences,

[23] http://www.lib.uoc.gr/info/absrv/infr/about/?styl=.

- The collaboration with the other departments of the library (acquisitions, cataloguing etc.) as well as with the committee of collection development of the faculties, in order to coordinate the policy and the strategy on collection's development, according to the needs of academic community and the more general policy of the university,
- The publication of informative booklets, in printed or electronic form, on library's services and holdings,
- The guidance and training of readers in the use of integrated work stations of the Library and via which has access to:
  a. the OPAC,
  b. the electronic resources,
  c. the electronic tools, with which users can edit, produce, publish and disseminate information and knowledge.

The library offers Seminars to users to achieve the most effective utilization of the information resources, printed and electronic ones. The seminars are addressed in the whole academic community of the University.

In collaboration with teaching staff, the library is able to organize seminars on subject-oriented bibliographic research. In agreement with the departments is moreover possible the offer of seminars in English language, in different scientific disciplines, out of the programmed days and hours.

The instructions guides, published by the library are on the following issues:

- Databases (general instructions),
- Databases on Biology,
- Databases on Physics,
- Databases on Chemistry and Material science,
- Databases on Health sciences,
- Databases on Humanities,
- Databases on Social sciences,
- L'*Année philologique*,
- *Thesaurus linguae graecae*,
- Curriculum and Courses bibliography: research instructions,
- The Library,
- E-resources on Mathematics,
- E-resources on Computer science,
- WebOpac,
- Medical library collections,
- The physics and biology classification system,

- The Pure sciences classification system,
- The Health science classification system,
- The ILL service,
- Medical Library services,
- Hellenic studies digital library,
- Thesaurus of electronic terms.

3.12 Ioannina University Library[24]

The main library organizes seminars to users (professors, researchers, students, postgraduate students, and staff) aiming to familiarize them with library's services and organization, but also to its e-resources and e-services. The seminars distinguish to two layers, according to the level of information skills and needs of the auditorium.

First layer: Instructions given mainly to students:

- Organization and services of the library,
- Library's OPAC,
- OPACs of other Greek and foreign libraries,
- Databases,
- ILL.

Second layer: seminars given mainly to postgraduate students, researchers and the faculty staff:

- Organization and services of the library,
- Library's OPAC and e-Library,
- OPACs of other Greek and foreign libraries,
- E-journals,
- Greek and foreign subject digital databases,
- ILL and document delivery.

3.13 Library and Information Centre of the University of Macedonia[25]

The library offers training seminars to library users to cover their information needs and supports them on how to use the available library resources and be

[24] http://www.lib.uoi.gr/services/sem_ekp.php.
[25] http://www.lib.uom.gr/content/view/49/237/lang,utf-8/.

familiarized with them, mainly the electronic ones. The seminars take place throughout the academic year and all members of the Academic Community may participate. The subjects of the Information Literacy program are:

- Library Tour,
- Library Catalog-Horizon,
- Bibliographic databases,
- Electronic Journals,
- Internet resources Evaluation,
- Reference List and Bibliography.

The program is organized by the scientific information and documentation department of the library and is upgraded continuously depending on the users' needs. After training, the users should manage to:

- Realize the use of the library's automated system,
- Determine and comment evaluating the different sources of information they find,
- Focus in a subject discipline,
- Locate material relative to a subject,
- Recognize scientific or non-scientific content,
- Find statistical and other data in electronic or in printed sources,
- Exceed the stress of the library,
- Improve their communication with the library personnel asking help in their information needs.

The students are obliged to attend the courses that take place during teaching hours. The most modules of the program are common for every graduate department. What is changed in this context, is only the classification schedules, which defers according to the scientific discipline of every department. The courses include instructions and examples in:

- Classification numbers/ schedules,
- Classification system of the Library of Congress,
- Library's catalog/ OPAC,
- Variety and plethora of information sources: Select the relevant information source, Library and Internet, Which journal?
- How to locate… books, journals, e-journals, databases, Internet resources, special collections of the library,
- Information Assessment, based on 5 main criteria: Authorization, accuracy, objectivity, current use, extent,

- Research strategies,
- Style manuals,
- Bibliographic citations,
- Tutorials.

3.14 University of Patras Library and Information Service[26]

1. Guided tours.
   They are mainly addressed in students' groups and take place in a fixed period in the library. They may be referred to general information, i.e. the library's collections, the new building or be focused in specific scientific subjects. At the same time the library services and its organization and operation are presented extensively. The department of the support to users is responsible for this service.
2. Bibliographic research and documentation seminar.
   The goal is to make professors, postgraduate students and new researchers capable to properly search, use and exploit the bibliographic material they need, in order to manage the more completed and rapid achievement of their aim. At the same time, library seeks to inform audience about its holdings (books, magazines, databases, e-journals etc) and the way it can be used (OPAC, navigation into the library's web pages, use of network services, use of databases etc.) The seminar is a matter of interest of the audience; they can ask for courses attendance in the department of users' information and education.
3. Electronic resources seminar.
   The library staff can deliver the specific seminars irregularly, after personal arrangement. The audience obtains skills on the use, research and retrieve of the following databases, e-resources and information tools:
   - RefWorks,
   - Science Citation Index Expanded 1970 - today,
   - Social Science Citation Index 1970 - today,
   - Arts & Humanities Citation Index 1975 - today,
   - The asynchronous remoted learning platform eClass. The library created applications its services, based on this platform. Seminars on the use of eClass are arranged between audience and the responsible staff.

[26] http://www.lis.upatras.gr/Services/support_EL.php.

- Training on the use of online databases.
- Training in the databases in Cd-ROM format, that is: Journal Citation Reports-Science Edition (JCR), Worldwide Standards Plus (IHS, Information Handling Services), Greek Economic Guide (ICAP).

3.15 University of Piraeus library[27]

The library arranges introductory courses aiming to familiarize its users with its collection and services. These courses are organized mainly for the postgraduate students and new researchers, but every member of the academic community may also attend, or ask for a face to face or grouped training. Seminars are given at the beginning of each academic year after communicating with academic departments. The course includes the library tour and extended information on the library operation. Especially:

- Organization and services of the library,
- Library's OPAC,
- Bibliographic instructions,
- Digital databases,
- E-journals,
- Research strategies and technological skills.

Part of this information is given virtually, via the Infokiosk, which is included in the web page of the library. There are also printed guides on relative issues, such as:

- Library operation,
- Library services to users,
- Acquisitions,
- How to find an article from e-journal,
- Research strategies,
- European Documentation Center,
- European information in the web,
- Application for training in library's operation and resources,
- Application for training in European information resources.

[27] http://www.lib.unipi.gr/multi.php?fn=usrreg&cat=3&lng=en.

3.16 Library of the University of Thessaly[28]

It gradually supports and upgrades the information literacy capability of its users. Its essential aim is the contribution to the sufficient and effective management of informative needs of users (academic community and the public). In order to achieve this objective, the library implements three actions on information literacy. In future, the library will create a learning object repository, and the delivery of seminars via of remotely learning technologies.

- 1st Action-line.

Information literacy seminars which vary on the educational level of the audience and cover the following areas:

- Skills on of new technology tools,
- Skills on bibliographic research strategy,
- Skills on use of information tools, and
- Principles of information sources management.

- 2nd Action-line.

Information support on-demand. Customised support by the library staff, on the use of information resources, on the research and retrieval techniques.

- 3rd Action-line.

Dissemination of information support materials. Guides of the services in printed and in electronic form, varied level educational web pages, instructional tutorials and other material.[29]

4. Teacher education and the lifelong learning

Studies have revealed that the qualitative education and the equal access in it can only be ensured if they combine with wide scale educational reforms; one of them, quite essential, is the new role of teacher who continuously prepares the students for a gradually emerged information and knowledge society. Teachers must be supported to their job development and skilled to instructive and training methods and techniques.[30]

The development of European reference tools and the work of the clusters and peer learning activities inform and support countries' reforms.

[28] Balantzaras and Polyzou (2007).
[29] http://www.lib.uth.gr.
[30] High-Level Colloquium on Information Literacy and Lifelong Learning (2005).

Education and training challenges and the development of human resources figure prominently in the Lisbon National Reform Programmes of most Member States. Particular attention at both the national and European levels should be given to:[31]

- joined-up education and training policy in a lifelong learning perspective with strategic priorities set across the whole system;
- integration of policy developments in the areas of higher education, VET and adult learning within the overall work programme;
- mutual monitoring of developments in each country, moving from peer-learning to peer-review;
- making the most of Community funds and programmes, in particular the new Lifelong Learning Programme 2007-2013 and the EU cohesion policy instruments.

Lifelong Learning should comprise all phases and forms of learning from pre-school to post-retirement. There were, however, concerns that the employment and labour market dimensions of lifelong learning were too dominant... as well as the spiritual and cultural dimensions of learning. Overall, consensus can be surmised around the following four broad and mutually supporting objectives: personal fulfilment, active citizenship, social inclusion and employability/adaptability.

The definition of lifelong learning used in the Memorandum was: "all purposeful learning activity, undertaken on an on-going basis with the aim of improving knowledge, skills and competence". The breadth of this definition also draws attention to the full range of formal, non-formal and informal learning activity.[32]

The 3rd Joint Report[33] points to significant progress and challenges in education and training reforms. The following areas will need particular effort:[34]

[31] Commission of the European Communities (2007).

[32] Commission of the European Communities (2001).

[33] The report is based primarily on an analysis of national reports and of performance against a set of indicators and benchmarks. See Annex 2 and SEC (2007) 1284 "Progress towards the Lisbon objectives in education and training. Indicators and benchmarks 2007." It also draws on the results of the open method of coordination in the area of education and training, notably the use of EU reference tools, and peer learning supporting Member State reforms and on similar exchanges undertaken as part of the Copenhagen and Bologna processes. For the 1st Joint Report see Council doc. 6905/04 EDUC 43; for the 2nd OJ C 79 of 1.4.2006, p. 1.

[34] Commission of the European Communities (2007).

- Raising skill levels. People with low skill levels are at risk of economic and social exclusion. Continued high levels of early school leaving, low participation in lifelong learning by older workers and the low-skilled, and poor skill achievement among migrants cause concern in most countries. Further, future labour markets in a knowledge-based economy will demand ever higher skill levels from a shrinking work force. Low skills will become an ever greater challenge;
- Lifelong learning strategies. Most countries have made progress in defining unified and overarching strategies. Within such frameworks, progress is evident in pre-primary education, qualification frameworks and the validation of non-formal and informal learning. However, innovative learning partnerships and sustainable funding for high quality, efficient and equitable education and training[35] still elude many countries, the more so as the growth of investment appears to have slowed. Ensuring that reforms are effectively implemented is an important challenge to all;
- The knowledge triangle (education, research and innovation). The knowledge triangle plays a key role in boosting jobs and growth. So it is so important to accelerate reform, to promote excellence in higher education and university-business partnerships and to ensure that all sectors of education and training play their full role in promoting creativity and innovation.

New teaching and learning methods challenge the traditional roles and responsibilities of teachers, trainers and other learning facilitators. There is, therefore, a strong need to develop their training, including in multi-cultural competences, to ensure that they are ready and motivated to face the new challenges, and therefore to promote tolerance and democratic values. This should also include further reforming and improving pedagogical approaches in formal, as well as non-formal learning. The exchange of experience between schools, adult education and voluntary organizations, ethnic minority centers, universities and companies should provide insight into learning needs in this area.[36]

[35] Commission Communication "Efficiency and Equity in European education and training system" COM (2006) 481.

[36] Commission of the European Communities (2001).

4.1 Two examples from primary and secondary education

a. Information literacy for teachers: cooperation between Eugenides foundation[37] and the educational portal of the Ministry of National Education and Religious Affairs.[38] Because it is acknowledged that information literacy is an essential "good" for citizens nowadays, the Ministry of Education and the Eugenides foundation library organized set of seminars/workshops to teachers and secondary school professors. Teachers and professors are the professionals who "consume" plethora of information which they have to manipulate in a manner that they have to create educational content and resources for teaching and learning purposes. On the other hand, they are interested in learning further for themselves.

The library of Eugenides foundation organized a circle of five (5) seminars/ workshops for teachers, to train them to ICT, to make them able to locate and use the information effectively. The seminars have designed by both librarians and teachers. Specialized librarians and teachers demonstrate the educational portal and the methodologies of content management. The attendees will achieve to distinguish the various kinds of information sources, printed and non-printed, as well as the plethora of the information record medium (text, picture, sound, animation, data etc.).

The program aimed to encourage teachers to act as multipliers, disseminating the technological and literate skills they obtain to students and teachers of their school. The educational portal of the Ministry of education supports this effort and the librarians cooperate to achieve the comprehensive content and the effective and efficient procedure. The seminars covered the following topics:

- Terminology, methods and techniques of research, evaluation criteria of web pages,
- Training on the research methodology in a library' catalogue,
- Compilation of bibliographies: methodology and theory,
- Demonstration of the library's catalogue: practical work,
- Research scenarios applied to the catalogue,
- The Educational Portal of the Ministry of Education: past, present, future, the goals and the prospects.
- Research strategies in electronic information resources,

[37] www.eugenfound.edu.gr.
[38] www.e-yliko.gr.

- Research strategies in the Internet,
- Research scenarios applied to the educational portal and Internet.

b. The Hellenic-American Educational Foundation libraries[39] offer information literacy courses to teachers and students since 1988. The technological equipment and audiovisual collection, as well as the electronic material of the library support the work of users and their job development and continuing education. At the web site of the library, some pages have designed and contain instructive material. The WebPages "chosen sites", "internet navigation" and "how to carry out a project" instruct the users to search engines, to retrieve resources and to evaluate the accessed content. The methods used by the library are: library orientation, courses on the use of resources, projects and specially information literacy courses. The whole program is compiled and implemented after collaboration between librarians and educators.[40]

4.2 Lifelong learning programmes

a. Centers of adult education, established by the Ministry of Education. There are 56 centers in 13 regions of the country. There is a library in every center, covering the educational needs. The collection contains pedagogical subjects and those that are taught in the center. The library users are the professors, the students and the managerial staff. In the line of the extension of lifelong learning, a centre of adult e-learning has been established and its hybrid library too. The library mainly covers the educational needs of technological literate people, who gradually increase last years, through lifelong learning programs. The library is linked with the portal of Hellenic Open University[41], as well as the adult education centres. This library is expected to support more the adult education. The further goal is the creation of a library network in which libraries operate complementarily; they share their collections, the organization, and the services and this way expand their activities, saving human and economic resources.[42]

[39] http://www.haef.gr/gre/libraries/index.html, http://www.haef.gr/gre/history/pc_presentation.pdf.
[40] Anastasiadou *et al.* (2007).
[41] http://www2.eap.gr/frameset.jsp?locale=en.
[42] Τζουμάρα (2007).

b. Public libraries, which are the most relevant to lifelong learning and develop programs on a variety of subjects, have not involved in information literacy projects. The Association of Greek librarians and information professionals[43] trying to cover the gap starts a set of seminars for public libraries professionals. The program aims to facilitate them to enter the service in their library, to offer theoretical and practical information, to make librarians to create their ideas.

5. Problems and difficulties

Although the conditions get better year by year, there are problems on the expansion of information literacy. The first problem is the low finance of libraries. In spite of the prices increase the budgets stay unchanged. Another problem is the lack of human resources in libraries, even more the absence of subject librarians who should be the reliable responsible professional for this task.

In most of the cases referred above, the information literacy program, as well as the user education one, is not included in curriculum. That means that both university administration and professors have not realized the importance of the course. On the other hand, the students have not to attend it, or, in the case they attend, they don't pay the needed attention. It is mentioned[44] that the students' interest depends on the assessment procedure of the course. If they give exams and take a grade they attend and follow all the rules and conditions of the course.

Consequently, librarians underestimate the offered service, which does not attract willing and comprehended audience and come to more urgent duties in reference work of the library. The majority of academic libraries however design and implement such programs and develops a research activity too. The exchange of the knowledge and the experience is very important, the demand has appeared already. Information literacy is a matter of cooperation, coordination, sharing and integration.

[43] http://www.eebep.gr.
[44] Nikitopoulos (2003).

6. Conclusions

What lacks from Greek library system mostly, is an organizational governmental scheme that should face the programming and strategy on libraries and archives and coordinate the actions, in order to achieve more information, more effective and efficient results.

Greek librarians and information professionals association proposed to the government the establishment of a consultative committee, like a national council of libraries, which will comment governmental authorities on preparative legislative texts, organizational policies and strategies, guidelines and standards.

This movement awakes both information professionals and government bodies to coordinate their efforts for common goals and mission.

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INFORMATION LITERACY EDUCATION OF PUPILS AND STUDENTS IN POLAND - DIAGNOSIS OF THE EDUCATIONAL SITUATION

*Sabina Cisek, Monika Krakowska, Maria Próchnicka**

Abstract

A main purpose of the project is the comprehensive and systematic diagnosis and characteristics of undertakings connected with education in information and communication within the school education system in Poland. The issue of the project is also concentrated on working out the conception of program and organizational solutions in information and communication educational system. Detailed objects of the project:

1. Working out the diagnosis of the state of the information and communication education in Poland through:

- comparing the state of research concerning the information-communications education in Poland
- analysis of formal documents describing the policy of education in information and communication abilities (e.g. of educational standards on individual levels, teaching programs on individual levels) that conduct to identification of groups of issues that are the subject of the information and communication education on individual levels of education as well as comparing them with groups of problems pointed out in worldwide adopted standards and models of IL education - e.g. Seven Pillars of Information Literacy, (SCONUL, 1999); Information Literacy Competency Standards for Higher Education (ALA, 2000); Information Literacy Standards (CAUL, 2001), Australian and New Zealand Information Literacy Framework (2004). In research a comparative analysis of documents will be used.

1. Introduction

This paper aims to give an overview of information literacy (IL) in Poland, mainly in the light of formal documents and policies with a few examples of actual initiatives.

* Jagiellonian University. Institute of Information and Library Science, Krakow - Poland

Because there is not one generally accepted meaning of the term "information literacy" we adopt, for the purpose of this article, the statement from the Alexandria Proclamation. This broad definition adequately indicates complexity of the issue. Thus:

"Information literacy

- *comprises the competencies to recognize information needs and to locate, evaluate, apply and create information within cultural and social contexts;*
- *is crucial to the competitive advantage of individuals, enterprises (especially small and medium enterprises), regions and nations;*
- *provides the key to effective access, use and creation of content to support economic development, education, health and human services, and all other aspects of contemporary societies, [...]; and*
- *extends beyond current technologies to encompass learning, critical thinking and interpretative skills across professional boundaries and empowers individuals and communities"* (Beacons, 2005-2006).

Moreover, information literacy, or better – information culture, functions in the context of three dimensions of the information society, that is: *connectivity* ("the establishment of an efficient ICT infrastructure"), *content* ("the development of a strong supply of public electronic services") and *competencies* (Basili, 2008).

The task of analyzing the current state of information literacy in Poland is additionally complicated by:

- overemphasis – in the public debate as well as in action – on the connectivity dimension, the access to the Internet and the ICT competencies, what results in *computer/digital/ICT literacy* being the dominant issue,
- lack of an integrated, well-defined information literacy policy at Government level.

In this respect Poland follows the European Union "way of thinking" (Basili, 2008). On the other hand side, it is a matter of debate whether "centrally-planned" information literacy policy is really needed or effective, both on Polish and EU levels. One may argue that in a democratic, self-governing civil society this should be left to the citizens themselves, not-for-profit organizations and the business. We will not discuss this issue here but it is worthy to notice.

Nevertheless, the institutional infrastructure of information literacy can be found in Poland and there exist a number of formal strategic documents,

legal regulations and educational activities concentrating on at least *selected* aspects of information literacy. Also, the concept of information literacy itself is not unknown and appears in discourse, particularly, but not only, within the library and information profession (Derfert-Wolf, 2005).

In this article we do not discuss in deep the *connectivity* and *content* backgrounds of information literacy, nor depict we the whole infrastructure of IL in Poland. We have decided to focus on three issues: (1) information literacy problems in the principal documents setting strategies for the future of Poland, (2) the role of the education sector in the IL development, and (3) chosen activities by the LIS profession. Particular attention is given to the teaching-learning of information literacy in the Polish education system.

2. The Government and information literacy

The first part of our paper is devoted to the vision of information competencies emerging from the key strategic documents concerning development of Poland in the next decade.

Till the moment, as it has been already mentioned, the Polish Government has not worked out a "unifying" formal act, clearly and comprehensively stating general goals, the strategy and methods for the development of the nation-wide information literacy. As a result there is not any integrated system embracing all forms of education and other activities in the area. Nor is it apparent who and to what extent is responsible for the information literacy of the nation.

However, various aspects, problems and contexts of information literacy may be identified in the core documents determining the priorities for Poland in the forthcoming years: the *National Development Strategy 2007-2015,* the *National Cohesion Strategy 2007-2013* and the *Indicative Strategy of the Informatization of Poland until 2013 and a Long-term Forecast of the Information Society Transformation until 2020.*

2.1 The National Development Strategy 2007-2015 (Strategia Rozwoju Kraju 2007-2015)

The *National Development Strategy 2007-2015* (*NDS*), accepted by the Council of Ministers on November 29th, 2006, is the principal document determining the aims and priorities of Poland's socioeconomic

development in the nearest future. The *NDS* identifies major areas that will be the focus of the state's activities and provides guidelines for other national and local strategies and programs (Ministry of Regional Development, 2008). Furthermore, "it takes into consideration the most important development trends of the world economy and the goals that European Union sets in the renewed Lisbon Strategy" (National Development Strategy, 2006, p. 7-8).

The *NDS 2007-2015* indicates formally several priorities for Poland. The first priority is: "Growth of competitiveness and innovativeness of the economy" (National Development Strategy, 2006, p. 33). That priority is planned to be realized by a few activities. Amongst them there is "Development of information society", in description of which we read:

> *"The main aim of education is educating citizens informing, communicating, learning and creating – in conditions of a more and more general access to information and communicative techniques. A priority for Poland is therefore promotion of supply of tele-information services and skills in the scope of using tele-information and obtaining information"* (National Development Strategy, 2006, p. 37-38).

2.2 The National Cohesion Strategy 2007-2013 (Narodowa Strategia Spójności 2007-2013)

The *National Cohesion Strategy* (formal name: the *National Strategic Reference Framework 2007-2013 in support of growth and jobs*), a document adopted by the Council of Ministers in November 2006, refers to "creation of the conditions for the growth of competitiveness of knowledge based economy and entrepreneurship assuring an increase in the employment and in the level of social, economic and territorial cohesion" (National Cohesion Strategy, 2006, p. 42). This text emphasizes the *connectivity* and *content* dimensions of information society, i.e. improvement of the infrastructure and public services related to collecting, processing and granting access to information:

> *"On the entire area of Poland universal access to the Internet shall be provided. Through the process of informatization of public services and business environment, to be established and implemented is e-economy, e-administration, e-health, e-education, and opportunities that results from that process would be utilized more effectively for the development of the economy. [...] Also promoted would be an increase in application in the private and public sector of information and communication techniques, which increase accessibility of*

information resources and services in an electronic format for enterprises and households, and which facilitate running business operation. [...] Application of ICT techniques in public institutions, school and education centers and by the society would contribute to improving the accessibility of information [...]. Stimulation would cover better utilization of access to universal information among consumers and entrepreneurs. The introduction of e-government electronic services would assure better level of efficiency of public institutions. A profound modernization and informatization of justice institutions would be performed; electronic platforms of public services would be introduced as regards social insurance systems, settlements with tax institutions, or registration of economic operation" (National Cohesion Strategy, 2006, p. 39, 61, 64).

The information literacy problems are not, as one can see, directly addressed here and the "access attitude" is prevailing.

2.3 The Indicative Strategy of the Informatization of Poland until 2013 and a Long-term Forecast of the Information Society Transformation until 2020 (Strategia kierunkowa rozwoju informatyzacji Polski do roku 2013 oraz perspektywiczna prognoza transformacji społeczeństwa informacyjnego do roku 2020)

This document, prepared by the Ministry of Science and Informatization, explicitly recognizes the educational challenges of the knowledge society and underlines the need for the nationwide ICT and digital literacy. It stresses that ability to use tools and services of information society is today inevitable:

"Overcoming psychological barriers and acceptance of the Internet as convenient and safe tool 'making life easier' is necessary. [...] Capability of using computers and the Internet as well as traditional information resources, encyclopedias, dictionaries and library catalogs both in private and professional life should be imparted to students already in school" (Indicative Strategy, 2005, p. 37).

Also, the concept of *digital literacy* is defined in the analyzed text:

"Digital literacy is an ability to use computers and the Internet. The criteria of being digitally literate are as follows:

- *working with a word editor – typing and printing*
- *knowing how to receive and send electronic mail*
- *using search engines, including information seeking on the Internet"* (Indicative Strategy, 2005, p. 38).

In addition, attention is drawn to the fact that the ability to use the Internet effectively, except for convenience, saving time and money, might be

a measure for social integration. Telework is a good example, because it offers opportunity for professional carrier and earning a living for people who cannot work in a traditional way – the disabled, parents bringing up small children, etc. (Indicative Strategy, 2005, p. 38).

To summarize, selected "facets" of information literacy and questions concerning – directly or indirectly – its development, training and promotion in Poland are to be found in the Government formal strategic documents. They appear mainly in the context of:

- on the national (public) level – building the information society, the knowledge-based economy, and the civil society (civil rights, informed citizens, e-inclusion, social integration);
- on the individuals' (private) level – improving the quality of life, the necessity of life-long learning and emerging new work opportunities.

Generally speaking, the essentiality of information-oriented competencies in today's society is recognized, at least – to some extent, by the Polish authorities and political decision makers, even though the term "information literacy" itself is hardly used in the debate and the whole concept is frequently understood too narrowly, i.e. as digital, ICT, Internet or media literacy.

3. Information literacy in the Polish education system

In the second chapter of our paper we discuss the core curriculum of the general education in selected types of schools in Poland, taking into consideration the content, the characteristics of skills and the learning outcomes related to information-communication education (Ordinance 23 August 2007). The purpose of the analysis is to specify the elements of knowledge and competencies that the students gain on each level of education, mainly within the duration of compulsory schooling, i.e. from the age of seven to eighteen (Act on Education System 1991-2007)[1]. It should be noted that all children in Poland start acquiring knowledge concerning the

[1] Act on Education System, September 7th, 1991, Art. 15, fragment 2 states: "School duty starts in the school year during which child becomes 7 years old and lasts until the end of middle school, no longer than until the child is 18 years old." Learning in primary and middle school in Poland lasts nine years. It means that when students finish middle school they are 16 years old, so they have to start learning in secondary school, but they do not have to finish it, if it lasts more than two years.

ways of communication and the sources of information, as well as they train the information-communication competencies, when they are six years old, i.e. when the compulsory nursery school education begins (Act on Education System, 1991-2007)[2].

Some elements of the information-communication education, such as awakening the interest in getting to know the surrounding by observation, experimenting, manipulating objects, shaping the skill of using the language, picture and text, awakening the active communication and information attitude, already appear in nursery education of children aged three and more. Nevertheless, such education does not include all children before 6 years old, only the ones who attend nursery schools.

The structure of the educational system in Poland is highly developed, with schools and other education centers that have various functions. According to Article 2 of the Act on Education System, the system includes:

1. nursery schools,
2. schools: primary, middle, secondary, artistic,
3. special education centers that enable developing one's interests and skills and which organize various forms of recreation as well as leisure time activities,
4. continuing education centers,
5. artistic centers that enable developing artistic skills and interests,
6. psychological and pedagogical counseling centers,
7. youth education centers,
8. facilities that provide care for students studying outside their place of residence,
9. Voluntary Labor Corps – education and upbringing of its participants,
10. education and improvement centers for teachers,
11. pedagogical libraries,
12. boards of social services workers.

Only the core curricula of primary, middle and secondary schools are analyzed here. Issues concerning the information-communication education in the remaining types of schools are left out.

[2] Act on Education System, September 7th, 1991, Art. 14, fragment 3 states: "Child aged 6 is obligated to do one year school preparatory course either in nursery school or in special group in primary school".

The core curriculum of general education in primary, middle and comprehensive secondary schools, profiled secondary schools and secondary technical schools, does not include terms such as "information literacy", "information-communication education", "acquiring and shaping information-communication competencies". However, the scope of skills and knowledge involved by these terms is clearly stated in the characteristics of the skills gained by the students after they finish each level of their education. These skills include:

"• *effective communication in various situations*
• *effective team cooperation*
• *making individual and team decisions*
• *creative problem solving"*

and above all

"• *searching, ordering and using information from various sources and effective use of information technology"* (Ordinance 23 August 2007, attachments 2 and 3).

Integrating the teaching of content-related issues together with shaping the technological skills concerning effective usage of tools for recording, processing, storing and presenting information and for communication, while at the same time creating the habit of searching and using the information during schooling and after finishing the education, is characteristic for the IL curriculum assumptions in Poland. Therefore, elements of knowledge and skills concerning IL are not only related to the content of specialized school subjects. That topic is also present in the inter-discipline teaching on the first stage of primary school, in educational activities in particular school subjects and in educational paths that integrate various subjects.

3.1 Information literacy education in primary schools

Education in primary school lasts six years. It includes two educational stages: integrated teaching in grades one to three and teaching done during subject lessons and educational paths in grades four to six.

During the first stage of education acquiring knowledge and skills connected to searching and using information, as well as to communication, is a part of the inter-discipline group of contents that include learning how to read, write, basics of arithmetic and geometry, knowledge of the natural human environment and learning about the works of human mind and hands. In the early stages of education pupils learn about the school library,

the basics of using the information technology, as well as about various ways of human communication and various forms of expressing thoughts.

School subjects and educational paths are introduced on the second stage of primary education. IL education is done both as a part of the education path called *Reading and media education* and by teaching other subjects and paths, especially mother tongue and foreign language. In order to search for information, to acquire and develop the knowledge, and also to present and communicate information people mostly use natural language. Therefore, shaping the language competencies is the basis of all education, including information-communication education. What follows, teaching other subjects with respect to shaping communication competencies provides the knowledge of special sources of information and teaches the skills necessary to read them, specific for each discipline ways of noting and interpreting information (e.g. a map, a scheme, a diagram) and specialist terminology. Studying some subjects may also awake interest in students, and, what follows, it teaches the ability to ask questions and formulate problems. These requirements are reflected in the learning objectives that sum up the teaching process on the second stage of primary school.

Students learn how to use computers and information-communication technology as a part of computer science subjects. Educational activities being a part of this subject should show students how to use computer not only as a tool for text writing, but also how to use it to communicate and search for information. Computer science education combined with reading and media education prepares students to receive various texts, as well as to interpret and use them properly. As a result of information literacy education in primary schools, students should obtain the following skills:

- reading and writing in their native tongue
- using libraries and basic information tools in libraries
- using various sources of printed and digital information
- selection, evaluation and interpretation of information, especially with regard to specialized sources such as maps, plans, graphs
- reception, differentiating and interpreting media news
- safe use of computers
- safe use of computer networks, especially the Internet and World Wide Web, both as a source of information and as a communication medium.

Primary education is finished by the competences test. Standards of requirements concerning the test include, among five basic skills categories,

Using information (Ordinance 10 August 2001) (Ordinance 28 August 2007). When testing that category student should be able to correctly fulfill tasks connected to naming the sources of information and using them and should be able to analyze media news addressed to children and teenagers (Ordinance 10 August 2001) (Ordinance 28 August 2007). Other categories of skills that are tested after primary school also include elements of information culture. In the category *Reading* students should present their skills in reading and understanding information written in various ways, e.g. a diagram, map, plan, table, and in category *Writing* they show their skills in presenting information in various forms.

3.2 Information literacy education in middle schools

Middle school education lasts three years. According to the core curriculum "in middle school teachers introduce students to the world of scholarly knowledge". All the information-communication education is done within the same subjects as in primary school (Computer Science, Media and Reading Education); however, the content of teaching is not simply developing the assumptions made on the earlier stage of education. Middle school education assumes preparing students to become independent. Consequently, information literacy education, both with regard to content and technical aspects, aim at teaching students to make choices and properly use information, as well as equipment and IT tools. That means not only using existing solutions but also creating critical and creative attitude towards all messages, tools and forms of communication. Therefore, the following aspects are included among other achievements connected to teaching Computer Science:

"1. *Choosing, connecting and purposeful use of various IT tools for solving student's practical and school problems*
2. *Solving moderately complex problems and using known algorithmic methods*" (Ordinance 23 August 2007, attachment 2).

The results of media and reading education include not only using the sources of information, but also independent creation of thematic specification as well as conscious selection and usage of information passed by all kinds of media, recognizing forms of media messages and using them skillfully. Such skills are also considered important as a result of teaching other subjects, with regard to specialized sources, forms of notation and information coverage connected to these subjects. For example, the result

of teaching mother tongue should be the need for self-education, understood as "searching for information in various sources, documenting, note-taking, selection and information storage, intelligent use of mass media" (Ordinance 23 August 2007, attachment 2). And in case of the history subject, students should be able to "interpret various historic sources" and "find various sources of historic information" (Ordinance 23 August 2007, attachment 2).

Information-communication education in the middle school should teach students following skills:

1. advanced use of computers and information technology for performing school task and searching for information
2. effective reading and selecting information
3. effective use of libraries and using automated libraries and information systems
4. creating bibliographies
5. using media messages as information sources, and their evaluation.

At the end of the last, third grade of middle school students undergo middle school final test. The scope of the test includes humanities subjects, mathematics, science and foreign language. Examination standards for science subjects include *Searching for and applying information* as one of the categories of knowledge that are tested during the final exam (Ordinance 28 August 2007). Detailed examination standards say that the exam should verify students' abilities concerning information management, such as:

1. Reading information presented as text, map, table, graph, drawing, scheme, photo
2. Information management: selection, comparison, analysis, processing, interpreting, presenting, using (Ordinance 28 August 2007).

3.3 Information literacy education in secondary schools

Secondary schools in Poland include secondary comprehensive schools, profiled secondary schools and technical secondary schools. According to the core curriculum, education in secondary school should give students the ability to use the obtained knowledge in the modern world and to face its challenges, such as globalization, information exchange, scientific and technical progress (Ordinance 23 August 2007, attachment 3). Similarly to previous levels, information literacy education in secondary schools is done

in three ways: as a part of a special subject (Information Technology), part of an educational path (Media and Reader Education) and as a part of teaching other subjects.

The aim of the Information Technology subjects is:

"1. Teach conscious and skillful use of computer and IT methods and tools.
2. Prepare to active functioning in information society" (Ordinance 23 August 2007, attachment 3).

IT is treated here as material, program and organizational basis to be used by students to solve problems connected to the educational process, to develop independent strategies of searching for information and self-development and to manage the processes of gathering, storing, editing and presenting information. It is essential that students learn the IT as it is a necessary element of teaching the subjects that in their curriculum include the following skills:

1. self-development based on various sources of information
2. working out individual strategies of learning
3. using sources of information that have various functions, forms of presentation, designation, such as information sources concerning science, public issues, law, geography, etc.

Teaching students how to use information technology skillfully and effectively is actually complementation of the Reader and Media Education path, as far as critical attitude to information sent by various media and quality assessment and information selection is concerned.

Education in secondary school is closed by "Matura" (final exam) which is a state exam that allows beginning studies at university or college. Procedures concerning the final exam are based on the examination requirements standards included in the attachment to the *Ordinance of the Minister of National Education and Sport, 10th April 2003, altering the ordinance on requirements standards being the basis of exam and test procedures* and in *Ordinance of the Minister of National Education, 28th August 2007, altering the ordinance on requirements standards being the basis of exam and test procedures.* Matura examination standards significantly stress the importance of verification of information-communication skills. It is reflected in formulating the standards of the Matura exam in various subjects, enclosed in the following categories: *Using information, Creating Information, Self-education.*

Information-communication education at Polish universities and colleges

is not defined by any consolidated education standards. Such schools have significant autonomy at defining the higher education curriculum. Law regulations concern only standards of education on particular majors, mentioned in the *Ordinance of Minister of Science and Higher Education, 12th July 2007, on standards of education for particular majors and on mode of creating and required conditions to run inter-disciplinary and macro-major studies*. Standards for each level of education define general requirements, characteristic of graduate's qualifications, description of general education content that includes specification of education content groups, their elements, as well as the expected learning outcomes, requirements concerning practical and general education and guidance. One of the standards' elements is introduction of education concerning IT; however, the scope of that education was defined in a very general way, without mentioning specific content or defining the learning objectives.

To conclude: in the light of the education legislation analyzed above, every student in Poland is expected to be information literate on completing the compulsory stages of formal education, which is at the age of 18.

4. The libraries' sector and information literacy

In Poland, like in numerous other European countries (Basili ed., 2003) (Workshop 2006), library and information (LIS) professionals seem to be the most knowledgeable group as far as the concept and importance of information literacy is concerned. As an example may serve a special issue on information literacy published by the influential online library journal *Biuletyn EBIB* (2005).

On the one hand side, there is a long tradition of patrons' education in Polish librarianship. The majority of libraries of all types (academic, pedagogical, public, school, special) teach their users at least basic, but quite frequently also advanced information skills. On the other hand, there is not any general statement or guidance worked out by the LIS community in Poland, by the Polish Library Association or other professional body, fully identifying their role and tasks in the area of information literacy. In addition, there is no legal regulation directly addressing this issue. As a consequence, libraries rather develop their own individual IL projects than cooperate. And they do not have enough power to shape the national information literacy policy, program or action.

However, there are examples of more general in scope, library-related undertakings, connected with some aspects of information literacy. Here, in the last part of our paper we describe two of them: (1) the Internet centers of multimedia information and (2) the work of academic libraries.

4.1 The Internet centers of multimedia information in school and pedagogical libraries

At the Ministry of National Education the Department of Computerization of Educational Processes is realizing many activities related to the development of information competencies.

The Department together with the European Social Fund co-finances a few undertakings within the Operating Program "Development of Human Resources". One of them, carried out in the years 2004-2006, was the project called "the Internet centers of multimedia information" aimed at school and pedagogical libraries. Its most important goals were: "increasing the access to education – promotion of lifelong learning" and "increasing the access to education through the purchase of the specialist equipment facilitating learning of pupils with special educational needs as well as equipping the Internet centers of multimedia information with the computer hardware and software" (Internetowe centra informacji, 2005-2008).

The main tasks of the Internet centers of multimedia information are:

- facilitating individual, i.e. by students and teachers, information seeking and processing;
- increasing the educational potential of the school and pedagogical libraries;
- supporting the process of self-education and lifelong learning of students, teachers and local communities;
- supporting integration of young people in the aspect of cultural differences, the physical and intellectual efficiency;
- enabling students, teachers and the local community to access the Internet outside school;
- promotion of school libraries in their local communities;
- establishing online access to the pedagogical libraries' catalogs (Internetowe centra informacji, 2005-2008).

The centers of multimedia information, called also the school centers of information are defined as multifunctional interdisciplinary teaching

complexes. They should function as basic "information labs" for students and teachers, where the information culture is built (Batorowska, 2004). The term "media center" generally refers to the modern school library in the information society.

4.2 The academic libraries

The library legislation from 1997 [Act on Libraries] and the legislation on the higher education from 2005 oblige academic libraries to take part in the education processes, however they do not give any concrete model of solutions in this respect. All realized forms and methods of education and the intensity of students' trainings are related to the specific type of academic library. College and university libraries conduct various forms of user education: library orientation, bases of the scientific information, training students and faculty members. Different trainings depend on users' needs of an exact college. The most often organized trainings of students are conducted on three levels.

Education on the first level is usually a basic training called "Library orientation". It is intended for the first-year students, who get the knowledge about:

- the rules and principles of using their academic library and other scholarly libraries;
- the structure of the library;
- specificities of the library and all types of documents retrieved in it; kinds of catalogs and also use of traditional catalogs.

The second step concerns exploiting sources of information and the information-search system applied at the library and use of the online catalog. At this stage a student should:

- know the information services of the academic library;
- know how to use diverse information sources, know the worth of bibliographies, indexes, databases, etc.;
- know about periodical publications accessible in the library;
- independently create a bibliography.

On the third level of education, it is essential:

- enabling the access to the current professional and scholarly literature, both Polish and foreign, delivering the knowledge about the newest

achievements in the field of science and lines of enquiry;
- sensitizing the student to the library – thanks to that they have knowledge, received on two first levels of library education, how to be information literate.

For instance, the Main Library of Medical University in Warsaw educates library patrons in the scope of the information competencies by organizing classes in library orientation, bases of the scientific medical information and different trainings resulting from current needs (Main Library of Medical University, 2008). The University of Warsaw Library offers two kinds of trainings: traditional and online – in cooperation with the Center of Open and Multimedia Education of the Warsaw University. Trainings concerning e-journals and databases are carried on once a week for all interested. This library offers also the lecture for a fee about using the Library and its information services to the interested secondary school students (University of Warsaw Library, 2008). The Main Library of Warsaw University of Technology organizes workshops on electronic information sources and languages (Main Library of Warsaw University of Technology, 2008).

Medical librarians are suggesting, in relation to the information literacy education forms, that it would be effective to put both rudimentary and advanced workshops and online trainings on the library's web page. The prerequisite here is that each of students should have at least basic knowledge about the library, show computer/Internet skills and a command of English. Using diverse sources of information, guides, presentations, and online auxiliary materials shapes the capability of the self-reliant learning of users – the essential element both in the process of studying and in further academic development. The webpage of the Main Library of the Medical University of Gdansk (2008) is an example of exploiting sources and electronic tools on a website.

It seems necessary to deepen cooperation between academic libraries to broaden and diversify their educational offer related to the information literacy development. It is also worthwhile giving some thought to forms of educating and improving the teaching personnel of libraries.

5. Conclusion

There is a substantial amount of work being done in Poland in the discipline of information literacy, however:

- it is not coordinated on the national level, for example by a dedicated governmental agency. As a result, cooperation between the potential information literacy "stakeholders", i.e. central and local administration, the education system, LIS profession, information industry, NGOs, business is poor;
- frequently it is developed pragmatically without clear and comprehensive notion of information literacy or even without awareness of its "existence";
- the naïve assumption that access to the Internet for everybody accompanied by the digital/ICT literacy will suffice in the information society and the knowledge-based economy is too often present in discussions and practice.

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INFORMATION LITERACY AND ROMANIAN HIGHER EDUCATION SYSTEM

*Anca Rapeanu**

In our days we can see that information is already the dominant production factor in society. This fact brings spectacular changes in the economic field, in the political environment, but also has a great influence at the affective and cognitive level of society members. Today's society is characterized by an exponential growth of information, of means and channels for disseminating it, also of information needs and information services addressing these new needs. The new technologies, new tools and applications for producing and retrieving, for processing and dissemination of information bring important changes in communication patterns and information behaviour, as the citizen of the „information society" expects to have access (and maybe guidance) to relevant sources of information 24 hours per day, 7 days per week.

Eighteen years have passed since the collapse of the Ceausescu regime. Romania is now a democratic state with solid institutions, democratic laws and a market-oriented economy. The process of change was and still is difficult, as the Romanian social and political background is quite different from other ex-communist countries. During the first two years of transition, some basic steps were made: one of the strategic goals of the reform process in the early 1990's was to reduce the role of the State and to stimulate the private initiative in order to achieve a structural reform of the economy. Another important step towards integration was starting the reform in education.

The growth of new technologies of information and communications is a reality acknowledged by Romanian authorities. Establishing the information society and knowledge-based economy are primary objectives of the reforms and essential components of the politic and economic program for development, especially as they were stated as a major conditions for integration in the Euro-Atlantic structures.

Citizens must be able to manage the new challenges brought by the advancement of new technologies, and also be able to improve their lives by

* Central University Library "Carol I", Bucharest - Romania

making use of the new services and opportunities the integrated information society brings. Building information literacy capacity for citizens is a solution to many challenges and a key element for progress in all domains, including economic productivity and social cohesion.

Information must be managed carefully, as it represents a solution in bridging the existing economic gaps. Countries in South-Eastern Europe are still behind in achieving the necessary level of knowledge and skills in order to take the opportunities which information society brings.

Information literacy is not a new concept, at least not for the well-developed countries. The notion has evolved primarily from information and library professions in the early 70's. The most widely used definition of information literacy was stated by ALA in 1989: "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."[1] In addition to this, CILIP 2004 definition includes the ethical aspect: "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner."[2]

Therefore, the information literate person must:

- recognize the need for information and determine the nature and extent of the information needed;
- find needed information effectively and efficiently;
- evaluate information and the information seeking process critically;
- manage information collected or generated;
- apply prior and new information to construct new concepts or create new understandings;
- use information with understanding and acknowledges cultural, ethical, economic legal, and social issues surrounding the use of information.[3]

Over the last decade there has been a general consensus on the important role played by knowledge in general and information skills in particular in achieving higher productivity, better economic results and better social cohesion. Numerous countries have developed national and regional policies regarding information literacy; they created the necessary legal framework and established training programs in information literacy at all levels.

1 http://wikis.ala.org/professionaltips/index.php/Information_Literacy.
2 http://www.cilip.org.uk/policyadvocacy/informationliteracy/definition/default.htm.
3 http://www.aso.zsi.at/attach/LL.Platform_Brochure.pdf.

Seen from this perspective, countries from South-Eastern part of Europe have a lot to catch up with. Though most of them acknowledged that building information literacy capacity for all citizens is the key to economic progress and social and cultural development, there are many efforts to be made in order to achieve this desiderate.

The main reasons for national information literacy policies are derived from economy and education, two domains that are so strongly connected. Nowadays all economic sectors require development of a strong information literate workforce, particularly the services sector and the dynamic industry of information. This reality brings a huge pressure in education field, as being the place to find the proper instruments to create or improve the skills knowledge society citizens need: critical thinking, collaboration skills, creativity and many others.

Information literacy combines skills and competencies that together make for effective use of information. This set of skills and competencies is of critical importance in a dynamic and changing information environment, where the only chance for survival and prosperity is permanent improving by lifelong learning.

The concept of information literacy is relevant for all ages and all social categories, from primary school children to senior citizens, as it has impact in all aspects of life. Information literate people not only know how to find information, but understand its limitations, they are able to manage and communicate information efficiently and they use information in various ways.

When in search for solutions to achieve knowledge-based economies, we have to take into consideration the crucial role that education plays in the development of information literacy, at all levels, starting with elementary and secondary schools.

Primary education is universal, and, in many cases, the only level that many disadvantaged people access. Therefore, it is essential for pupils to achieve information literacy in order to later become independent thinkers and learners. Of course, this calls for a common effort from education authorities and teachers to embed information literacy in all aspects of school curricula and pedagogy, beginning from elementary school. For this objective to be fulfilled, coherent and comprising national policies and strategies must be created and implemented, together with continuing professional education for the teachers, to prepare them for the new paradigm in education.

Higher education is the stage where students have the opportunity to extend their knowledge and skills, specialize in different domains. It's the

stage where their information behavior has to change, preparing them for the next stage of their development, the permanent one - lifelong-learning. In the context of higher-education information literacy is applied to the specific disciplines and professions.

The importance of information literacy is globally acknowledged – two the key competencies adopted by the European Parliament, digital competence and learning to learn, incorporate information literacy. Information literacy is also very present in the components of the strategies stated by the Bologna requirements.

With its beginnings in June 1999, when representatives from 29 countries gathered in Bologna "to forge an agreement aimed at achieving greater compatibility and comparability in their diverse higher education systems over the next decade"[4], the Bologna Process is currently considered to be the most significant reform of higher education in Europe. Aiming at creating the European Higher Education Area (EHEA), it is based on cooperation between ministries, higher education institutions, students and staff from 46 countries, with the participation of international organizations.

In order to transform Europe into an advanced knowledge-based society, education reform directions given by the Bologna Agreement are emphasizing employability, quality assurance, mobility, and compatibility. The basic framework consists of three cycles of higher education qualification: 1st cycle, usually awarding a Bachelor's degree, 2nd cycle usually awarding a Master's degree, and 3rd cycle - Doctoral degree. As outlined in the Bergen Declaration of 2005, the cycles are defined in terms of qualifications and ECTS (European Credit Transfer and Accumulation System) credits.

The Bologna principles correspond to new pedagogical paradigms - instead of accumulating and memorizing a huge amount of facts, the students need to become capable of critical reflection, decision making, trans-disciplinary problem solving, managing intensive information flow, organizing, selecting, evaluating and utilizing the encountered information. In the framework of the Bologna Process, quality assurance is focused on learning outcomes and students' competences.

Information literacy skills will facilitate academic success, and information literate graduates will have better access to the knowledge economy labor market and build the foundation for their lifelong learning process, to become productive members of internationally competitive organizations.

4 http://www.ond.vlaanderen.be/hogeronderwijs/bologna/.

Bologna principles have stimulated universities to restructure their curricula to align them with the real needs of society. The majority of European countries are currently adjusting university curricula in line with the Bologna Process principles.

1. Education reform in Romania

In Romania education reforms have been going on since the overthrow of the Ceausescu regime in 1989 and the country's transition to a market-based economy. However, these reforms have progressed relatively slowly and their objectives have changed over the years.

Before 1989, the education system in Romania was heavily centralized and politicized, as it was the case of the other socialist countries. This was even more visible within the tertiary education system, where all academics were members of the Communist Party, which controlled every aspect of education. All decisions, including the management of current activities in universities, were made by the Ministry of Education.

Reforms began almost immediately in the early 1990s but progressed slowly. As a response to the restricted number of students granted admission to tertiary education under the socialist system, the number of higher education institutions increased dramatically. Like in other ex-communist countries, in Romania we witnessed shifts in demand for the different fields of study: law studies, social and economic sciences, humanities became popular, as the technical fields such as mining, chemical engineering and metallurgy faced a serious decrease in enrollment requests. Though the legal framework was incomplete, and the accreditation regulations were quite unclear, the emergence of new private providers of tertiary education was spectacular.

We can identify several phases or the higher education reform in Romania.

The *period from 1990 to 1993* was characterized by measures with immediate reparatory objectives in education. The main objectives of legal measures were intended to depoliticize the curricula, to reintroduce fields of study, such as sociology and business, which were suppressed under the communist regime, and to improve working conditions for teachers. The actions taken in this first phase were not long-term oriented, lacked coherence and did not change significantly the nature of supply in higher education.

The second phase, *1993-1997*, was driven by the need of change in the legal framework in education and improvement of managerial practices at all

levels. Several fundamental laws were adopted during this period, such as the Law of Accreditation of Higher Education Institutions and Recognition of Diplomas in 1993, the Education Law in 1995, the Statute of Teaching Staff (1997), but most of the reform measures remained solely in theory and were not applied in the institutional level.

Though accreditation standards were adopted and the National Council for Academic Evaluation and Accreditation (NCAEA) was created in 1993 to ensure the quality of higher education programs, they begun to function only in 1996. Prior to that, institutions issued self-evaluation reports, but these were only a formality, as they were not analyzed and did not lead to accreditation. As there were not significant changes in the character of education or its underlying principles, higher education could still be described, as a system that "transmits knowledge but does not encourage creativity; mostly repetitive, it is based on separation into rigid subjects, it is still centralized..." (Marga, 1998).

Starting in 1998 the reform process accelerated. The focus points were: "curricular reform, increasing the links between education and the economic, administrative and cultural environment, improving the educational infrastructure, eliminating paternalism and populism from educational management, and enhancing international cooperation in education" (Marga, 1998). In this phase of educational reform four major objectives can be identified:

- enhancing access to higher education,
- decentralizing academic and financial management in higher education by strengthening institutional autonomy,
- encouraging an active partnership between the academic and business environments,
- improving the quality of higher education. (Korka, 2000)

State universities begun in 1999 to accept tuition fee-paying students in addition to those funded by the state and to set their own enrollment levels for such students. Enrollments increased significantly in public higher education (particularly in full-time, distance learning, and Master programs), although the physical endowment did not develop in the same rhythm. Universities focused on curricular reform - subjects with direct application in practice were introduced, academic specializations were diversified, interdisciplinary programs were developed. Curricula and programs are now designed by each department, approved by the Department Council and the Senate of the

University, and then by the Ministry of Education at the recommendation of the National Council for Academic Evaluation and Accreditation (NCAEA), to ensure national comparability. Although the Education Law of 1995 proposed frameworks for curricula, the sequence of subjects during the course of study in a program, the time allocated for each course, and adaptations of the framework to specific academic missions were decided at the university level, with the formal objective of ensuring high quality skills and knowledge for the students and graduates of higher education institutions.

The first big step towards integration of Romanian education system in the European one was taken when Romania signed the Bologna declaration, in 1999. In the period that followed, some Romanian universities started implementation of the Bologna principles. However, only in 2004, when a new law for organization of higher education (Law no. 288/2004) was passed, national-wide measures towards the implementation of Bologna were taken by all higher education institutions.

The education law issued in 2004 represents a major step towards the European Higher Education Area, as this law was the base for reorganizing the entire higher education system: university studies are structured in three cycles, Bachelor, Master, and Doctoral. Starting with the academic year 2005-2006, the applying of the European Credit Transfer System (ECTS) is mandatory to all universities: first cycle (180-240 ECTS) results in a Bachelor degree; second cycle (90-120 ECTS, exceptionally 60 ECTS) results in a Master degree; third cycle (3 years and in special situations 4 or 5 years) results in a Doctoral degree. According to the 2004 law, the Diploma Supplement will be mandatory delivered for free, including in a foreign language of widespread circulation, in conformity with the European provisions, starting with 2005/2006 academic year. The provisions of the law 288/2004 apply to all private higher education institutions, both the public and the private ones, accredited or temporary authorized, starting with the academic year 2005/2006.

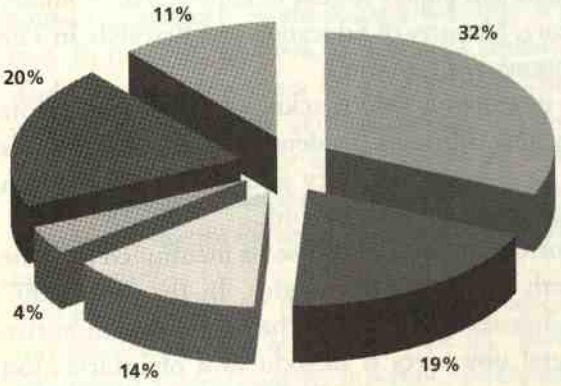
One of the most significant progresses can be considered the approval of the Law no. 87/2006 on Quality of Education. This law approaches the quality assurance in a trans-sectorial manner, and comprises the quality assurance methodology in education, internal quality assurance in education, external evaluation of the quality of education and accreditation of education providers and of study programs. The law stipulates the setting up of the Romanian Agency for Quality Assurance in Higher Education (ARACIS), being an independent state institution with roles in academic accreditation, evaluation and quality assurance for higher education.

The reform process is not finalized, as currently a new law for higher education is being prepared, which has been in public debate starting with 17th of December 2007. The new package of law aims at creating a unitary and integrated vision on the organization and functioning of the Romanian education system. Based on alignment to European requirements international practice in the field, the new project of law aims at providing, improving and development of the key competencies which are specific for the knowledge-based society. The new project enhances university autonomy, encourages differential financing by quality coefficients and brings clear definitions of the juridical statute and patrimony of the universities.

Though the reform process has been a long and difficult one, and some decisions lacked coherency or were not long-term oriented, we can say today that progress is visible in the field of education.

At present date, Romanian education system is comprised by 169 institutions (111 accredited universities): 56 state-owned accredited universities, 32 accredited private universities, 23 temporary authorized private universities, 6 postgraduate schools, 33 unauthorized universities that cannot organize admission programs and 19 universities that have not yet obtained a temporary authorization and cannot organize admission programs.

Higher education institutions in Romania



32% State owned accredited universities
19% Accredited Private Universities
14% Temporary Authorized Private Universities
4% Postgraduate schools
20% Unauthorized universities that cannot organize admission programs
11% Universities that have not yet obtained a temporary authorization and cannot organize admission programs

2. The concept of information literacy in Romania

Even though "information society" is a concept well-spread in Romania, understood completely and considered among national priorities, "information literacy", which is a concept closely related, and even more, we can say it is a sine qua non condition for achieving the information society, has not yet found a perfect match in Romanian language. The most common term in use is "cultură informațională", but we can also find it under the name of "alfabetizare informațională", "cultură digitală" or even "instruire informațională", "competență informațională". The first two terms have the same meaning, and are equivalents of "information literacy" or "culture de l'information", "maîtrise de l'information" in French. "Cultură digitală" can be translated by "digital culture" and is less wide than "information literacy" in meaning, as it refers to a certain type of support (digital). "Competență informațională" is the equivalent of "information competence", which is only a facet of information literacy. Thus, in research papers on information literacy the most spread term is "cultură informațională", but in some of the official documentation of ministries or other organizations the term "alfabetizare informațională" can be found – for example, in the Policy Statement of the Ministry of Communications and Information Technology the optimal level of education and culture for information society (one of the priorities stated here) is to be achieved by introducing "digital literacy" in the primary school curriculum.

Information literacy is quite seldom used in an explicit manner in the official sources (it is mentioned in Ministry of Communications and Information Technology strategy paper); more often components of it or related concepts can be identified in strategic plans and papers related to educational or library science issues (Ministry of Culture, Ministry of Education and Research, in The 2004-2007 Strategy for Development of Libraries).

The need of change in the instruction field is acknowledged by all actors in education – ministries, teachers, libraries, students – unfortunately this change is still strictly related to computer literacy and use of information technology and the informational aspect is left behind.

The implementation of information literacy courses is mentioned in some on the official papers, but with no effects in practice. In the 2004-2007 Strategy for Development of Libraries elaborated by the National Committee for Libraries, one of the general objectives is introduction of information literacy courses at secondary and tertiary level. The Policy Statement of the Ministry of Communications and Information Technology mentions introducing "digital literacy" courses in the primary school curriculum.

Anyways, though the terminology is not always the most suitable one, and the term is sometimes used incorrectly, or for describing only part of its meaning (especially the technical one), very often we can find components of information literacy in official documents. It is the case of the new project for the education law, which comprises elements that can be easily related to the concept of information literacy, but it does not use the concept specifically.

On the other hand, the Bologna principles are integrated in the legislative framework and are applied in individual higher education institutions. Romania has been fully committed to the implementation of Bologna process in the national education system, so, as the Bologna principles correspond to the new pedagogical paradigms, they have a very strong component that relates directly with information literacy, as the growing population of learners, especially distant learners, will never succeed in being efficient and independent learners if they are not information literate. It is very clear that the skills required as part of the implementation of Bologna reforms include information literacy.

Though offering information literacy courses is not a required outcome for the accreditation higher education programs in Romania, components of information literacy are more and more present in the curricula of various institutions.

By analyzing curricula from 15 humanities faculties, from both public and private universities, we can observe that there are some variations. For example, within the specialization "Romanian language + Foreign language" there are different approaches for courses related to information literacy: there are faculties which offer courses in computer usage, others offer separate courses in research methodology, and very few offer courses combining the two. In most of the cases, this type of courses are offered in the first year of studies, and in few cases are continued in the second and third study-years, with a more applied and specialized approach. In the case of Medicine Faculties, the computer usage courses are offered in all study-years and the content of the courses is strongly related to the medical domain. In both cases, the courses do not exceed 2 hours per week, and are rewarded with 3-5 ECTS per semester.

The presence of this variety of courses can be the reaction of the universities to the needs of students, made possible by the university autonomy. Unfortunately, this type of response is not enough if we want to have fast and continuous progress. A critical issue has to be addressed is the lack of trainers in this field.

The main reasons for non-achievement in addressing information literacy problem are probably the insufficient understanding of the concept and its relevance within today's societies among policy makers, information professionals, private sector representatives and general public. I would mention also that cooperation between institutions (even similar one) is quite a difficult process in Romania.

The research in this field should be encouraged and results of research in this area should be promoted, disseminated in national conferences, and other media that are appealing to public opinion, managers and specialists in various fields.

The possibility to achieve information literacy must exist in varied formats: the compulsory education has to offer courses for the intermediate and upper education, but possibilities for improving information competencies must be accessible also to the rest of population, through continuous education in education institutions or in private sector companies, through relevant training. This kind of training should be encouraged, supported and financed. All activities have to be based on a national strategic thinking, harmonized with the international trends.

The role of knowledge and skills in achieving high results in all domains, including economy and productivity, has been universally recognized. To achieve performance in Romanian economy, in Romanian society, national authorities have to come up with a common policy, need to conjugate their efforts in order to impose the concept of information literacy as a national priority. The attention of general public has to be drawn on the importance and relevance of information literacy within the information society context.

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THE EUROPEAN AREA OF HIGHER EDUCATION (EAHE), INFORMATION LITERACY* AND LEARNING & RESEARCH RESOURCE CENTERS: A TRIANGLE OF EXCELLENCE FOR THE DEVELOPMENT OF LIBRARY SERVICES IN SPANISH UNIVERSITIES

*Aurora Cuevas Cerveró***
*Josep Vives i Gràcia****

1. The European Area of Higher Education (EAHE), an educational project in progress

The Spanish universities are now carrying out reforms arising from the new European Area of Higher Education (EAHE). These reforms have to do with a re-structuring of academic curricula, but they also affect the aims and methods of higher education in Europe, as the history of this endeavor clearly shows:

The Sorbonne Declaration (1998). It promotes convergence of different systems of higher education, emphasizing the outstanding role of universities in European culture. It also provides for the establishment of a European area of higher education as a key instrument for citizen mobility and the establishment of a unified labor market.

The Bologna Declaration (1999). It aims to establish a system of comparable degrees by means of a European Degree Supplement; a degree structure based on graduation and post-graduation; a European credit system (ECTS); the promotion of free circulation of students and professors; the cooperation for the establishment of systems of quality certification; and the promotion of a European model of higher education.

The Lisbon European Council (2000). It is an initiative of the European Union aiming to establish a knowledge-oriented Europe with a more competitive and dynamic economy based on knowledge.

The Prague Declaration (2001). It promotes an active role of universities and students in the drive towards convergence, the development of a

* Information literacy (IL) corresponds to the Spanish Alfabetización en mformación (ALFIN).

** Universidad Complutense. Library & Information Science Department, Madrid - Spain
*** Government of Catalonia. Ministry of Culture and Media. Subdirection of Libraries, Barcelona - Spain

machinery for quality certification, accreditation. It also provides for permanent learning as an essential tool in competition, social cohesion and quality of life.

The construction of the EAHE looks for a quality new model of university, both in teaching and in research. It also aims to a new model of learning, which responds to the need citizens have of critical tools for interpreting a constantly changing information, and capable of generating knowledge (Orera, 2007) This European model will especially benefit from the combination of a university library as a Learning & Research Resource Center (LRRC), and schooling in information literacy.

The new European Area of Higher Education aims to meet the following challenges (Martinez, 2004)

1. To substitute learning for teaching in the education paradigm
2. To substitute electronic information for printed information and documentation
3. To substitute a enter of learning resources for the classic university library.

In order to meet these challenges a relationship seems necessary between the European convergence and new methods of teaching and learning within the EAHE; convergence in information technology, where information technology new formats and platforms are proposed; and organization convergence, where new structures of management are proposed (Balagué Mola, 2003)

The combination of these three challenges appears in a new model of university library, the Learning & Research Resources Center (LRRC).

University libraries have always accompanied the work of the universities. In fact it would be impossible to conceive a university without a library. But, what type of library? It is certainly the type of teaching imparted by the university which ends up determining the type of collection and services offered by a specific university library. It could not be otherwise. If the European university changes the university library must likewise change and adapt its functions to the new reality.

But again, must the Spanish university change? From the restoration of democracy in Spain and the establishment of a State formed by self-governing regions,[1] the successive central and regional governments have

[1] A process in which the central government transfers several jurisdiction to the different regions.

allocated massive resources for the development of a solid university system. But this system has been pestered by several problems arising from overcrowding in the 1970's and 1980's, and from a military dictatorship which expelled or sent to exile the most excellent among academicians.

It is true that most often the Spanish university is geared towards the use of memory rather than practical experience. Its curricula, too, are designed to impart contents often irrelevant to the needs of the student. To sum up, it emphasizes "knowledge" over "learning".

At the end of the 1990s the number of students started to decrease, the Spanish society fully entered the society of information and knowledge and the European Union started to demand changes in the organization of higher education. Will now be the right moment? Can we think of "other" university and "other" way of doing things? How should librarians get involved in those changes?

The need for "new" aims and methods in Spanish higher education is not surprising. In Spain there have been several attempts at "reform". One of the most interesting happened in 1933 at the time of the short-lasting Spanish Republic. The State Minister, Fernando de los Rios justified the university reforms his government promoted by the need for a ***civis academicus*** (Gracia, 2006)

- A citizen with a unversity degree must also know the culture of his own times.
- The university must train scientifically the professionals society needs.
- Higher education must train researchers for creative ability.
- Are not these also the foundations that the EAHE promotes?

The European Area of Higher Education entails the beginning of a profound transformation in the university educational model. In this model three types of competence are looked for: competence in knowledge (cognitive), competence in the way to acquire them (procedural) and competence to be a person and a professional (attitudinal).

This focus of education on competences is not guided by a merely intrumental mentality, as it is evidenced by a reflection on curricular design, teaching practices and, especially, types of evaluation.

A competence-based formation focuses on understanding and on acting resposibly in daily life. Competences form a recognizable and evaluable set of knowledge, attitudes, values and skills related to one another (Cuevas y Vives, 2005).

The scientific literature on competences has lately increased substantially, but the different ways of classifying competences include at least three groups: basic competences, which determine the necessary profile to access higher or professional education, and are the foundation for more complex competences which will be developed later: the cross competences, required in a wide range of studies, which furnish tools required for analysing problems, evaluate strategies and provide relevant solutions in new situations; and specific competences, needed to perform a specific function, which are mostly related to a job.

The educational changes generated by competence-oriented education, such as new learning environments, permanent, active and cooperative learning or problem-solving, open new possibilities to teaching work: flexibility, individualization and adaptability. But they also present new challenges, such as the ethical dimension of knowledge, educational integration, the emotional dimension of learning, or the need to improve learning motivation in a global context.

In our view one of the most relevant aspect is the introduction of university studies which prepare the citizen for continuous education along the entire span of life. This is the most important goal in the educational transformation prompted by the EAHE. It is basically a model of "learning to learn": to present the student with basic knowledge to be later supplemented with a set of skills which, along with a set of concrete attitudes, will enable the student, after finishing his higher education, to exercise his knowledge and put them to work.

Continuous learning makes it possible to acquire and update knowledge, competences and capacities. It is therefore the best way to avoid labor exclusion due to social, cultural, and technological changes. It is a way to guarantee equal opportunity, since the capacity of dissemination of the TICs helps to balance inequalities. Even if continuous learning is a responsibility of society as a whole, the universities have a fundamental role, due to their capacity to work out varied educational possibilities, adapted to different situations, characteristics and needs of the population (Moscoso, 2003).

In this context the search, use and communication of information appears to be an essential task that every academic program must undertake. In this task information literacy seems an indispensable instrument.

2. Information Literacy as a holistic competence in the EAHE

The skills the EAHE demands from students require an excellent level of technological and information skills. This in its turn demands from the students: implication, critical and research ability, handling of original sources, capacity to relate different contents, a personal judgment, capacity for synthesis and for learning beyond the academia. We propose the paradigm of ***Information Literacy***[2] to achieve all these different competences. Information Literacy should be understood as a set of competences which enable to search, retrieve, evaluate and adequately use information, such as it is provided for in the ***Prague Declaration: Towards an information literate society.***[3]

> *"Information Literacy includes knowledge of one's needs and problems by means of information, and the ability to identify, locate, evaluate, organize and create, use and communicate information efficiently, in order to confront sets problems or questions; it is a pre-requisite to an efficient participation in information society; and is a part of the basic human right to learning through ones entire life".*

Information Literacy, according to this definition, is made up of as set of skills and competences closely linked to educational competences. Information Literacy, therefore, shall function as an organizing element in learning; it is therefore essential to have *competence models*[4] of information literacy, which envision a multi-dimensional reading, digital and hypertextual reading, along with other competences associated with the search, retrieval, evaluation and communication of information, which are competences proper to supporting presential education, open or distant learning.

The new university pedagogical model arising from the coordination of degrees in the European Area of Higher Education, and based on competence acquisition, implies a need for information literacy; and a university library in its new dimension as Learning & Research Resource Center becomes the right place in which to acquire those competences.

[2] This paradigm enjoys an important international development, as the large amount of publications in recent years show, especially in the United States and the European Union. It is also obvious from the attention rendered by the main library science associations, ALA, IFLA and UNESCO, among others.

[3] Prague Declaration is available in: <http://www.melangeinfo.com/Doc/Prague_Declaration2003.pdf> [visited: 1-01-2008].

[4] Tuning Project web site available in: <http://www.rebiun.org/Contents.aspx> [visited: 1-01-2008]. DeSeco web site available in: <http://www.portal-stat.admin.ch/deseco/index.htm> [visited: 1-01-2008].

The European Area of Higher Education offers an excellent opportunity for the full integration of university libraries in the process of university teaching, learning and research; they should offer Information Literacy as one of their main services. The role that LRRC can perform in the society of knowledge - as producers, transmitters and disseminators of knowledge - grants them a key role in student formation and development, assuming at the same time a great responsibility in confronting the changes entailed in the European Area of Higher Education.

Training in the use of information is nothing new or alien to the professionals of documentation in our country. Besides guiding users in using libraries, there is the precedent of "information pedagogy", first coined by Francisco Javier Bernal in 1985 (Gómez-Hernández, 2003). Such training was already provided for in the first Plan Nacional de Documentación para la Documentación Científica y Técnica (PLAN IDOC, España, 1985).

About the competence model most widely used by university libraries in Spain, it should be mentioned that they are just like those used in the rest of Europe. They are referenced to the ACRL or SCONUL, although those of BIG 6 skills are used at times. These models are usually adjusted to the needs of the students in the specific university or degree where they are taught. This adjustment entails, in any case, that each library personalizes its offer, emphasizing those competences and knowledge idiosyncratic to their situation.

3. The university library as it turns into a LRRC, and Information Literacy as a catalyst of educational change

The university library, in its innovative dimension as a Learning & Research Resource Center (LRRC) is a privileged space, an environment suitable to promote teaching innovation, open learning through life, and the right to information for all.

The LRRC supplements the traditional idea of a university library, when it conceives it as a dynamic educational space where all university services are concentrated that support learning and research based on the world of information and technology. It also offers services that meet the cultural and leisure needs of its users. The LRRC provides the classroom - as a learning space - with innovative material resources, as well as qualified professionals who co-operate in the process, such as librarians, computer experts, paedagogues and teachers.

One of the present challenges that the university faces is the planning and management of services that the university offers to the community, mainly in the area of teaching, research and training throughout life. In order to pursue this goal, universities look for improvement strategies, invent new organizational proposals and start programs and projects to maximize the efficiency of resources (Martínez, 2003).

REBIUN[5] (Red Española de Bibliotecas Universitarias, Spanish Network of University LIbraries), in devising strategies to bring university libraries to a level of excellence, is supporting the process of transformation of university libraries; its strategies are in fact affecting directly the very process, as they include in their strategic plan I (2003-2006), the strategic guideline 1: Promote the construction of a new model of university library, *conceived as an active and essential part of a Learning & Research Resource Center (LRRC).* The idea of REBIUN is a presentation of tendencies, conditions and expectations which form the environment of Spanish university libraries, a goal pursued by all efforts and actions included in the II Strategic Plan, 2007-2010. The challenge for 2010, a key date for the implementation of the European Common Area of Education and Research, is to consider libraries as agents of the new educational model and providers of key services for that new model present in the European Area of Higher Education and meet the challenges implied in the new European framework of research.

In strategic line I[6] dof REBIUN 2010 the first strategic goal proposed is *to continue promoting the new model of university library as a Learning & Research Resources Center, LRRC,* and it offers the following guidelines to libraries:[7]

- To adjust facilities, spaces and furnishings so they offer students and professors confortable areas where they can work and learn in groups.
- To offer new library services, especially those related to learning processes: a good information service integrated in the university, and state-of-the-art TIC.
- Internet access from any place in the library etc.
- To organize and promote training of students in information skills, so they progressively acquire core competences that are valuable for their entire life.

5 Institutional web site available in: <http://www.rebiun.org/Contents.aspx> [visited: 1-01-2008].

6 Line 1: REBIUN in the sphere of Learning. To orient and give support to university hbraries in the new challenges of the European Area of Higher Education and in changing the teaching model focusing on learning by the student.

7 The Document II of the REBIUN strategic plan can be visited m <http://www.rebiun.org/doc/plan.pdf> [visited: 1-01-2008].

- To create and design an excellent digital library, taking into account the real needs of the users, and adapt it to the new proposals of the digital library 2.0.
- To integrate the digital libray in the university virtual, promoting on-line learning by professors and students.
- To develop institutional deposits both to preserve the university electronic information and to increase the visibility of the research performed by the professors.
- To progressively develop new university services and projects that meet the real needs of the university in the new framework of EAHE and ECAER.

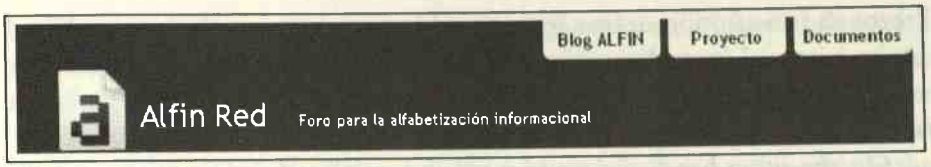
The second strategic goal refers to Information Skills (a program of Information Literacy).[8] It *seeks to promote action towards the development and implementation of Information Skills, as cross competences in the new teaching model.* Its main proposals are:

- To promote and give political support so that this typology of Information Literacy is imparted in a professional way in all curricula to be modified by 2010.
- To coordinate and create joint projects related to communication and dissemination of virtual training (virtual courses, virtual campus, etc.), virtual materials and tutorials (guides, orientations, programs, etc.) related to training and learning in Information Literacy.
- To include training projects for librarians in non-presential teaching.
- To create and maintain a sub-site of REBIUN about Information Literacy in order to inform about resources in information on already existing "Information Skills" (teaching materials data bank, bibliography on Information Literacy, projects, etc.).
- To promote the participation of REBIUN in Information Literacy projects both in Spain and abroad, guiding and disseminating innovative proposals and objectives in this direction by university libraries.

Another important drive to the convergence between LRRC and Information Literacy was Alfinred,[9] a network of information literacy professionals in Spain.

[8] The Strategic plan 2007-2010 of REBIUN. Available in <http://www.rebiun.org/doc/plan.pdf> [visited: 1-01-2008].

[9] Available in: <http://www.alfinred.org/> [visited: 10-01-2008].



[Alfin Red Forum for information literacy Project Documents]

Alfinred is a co-operative project sponsored by the Spanish Ministry of Culture, resulting from the conclusions reached in the first specific seminary[10] on information literacy carried out in Spain in 2006, in order to promote work in this field. Previously to this project mention should be made of the distribution list Alfincat,[11] created by a work force on information literacy within the Col·legi Oficial de Bibliotecaris-Documentalistes de Catalunya,[12] one of the professional associations with a wider reach within Spain. There is also another distribution list on these topics, Alfainfor,[13] chaired by the group DOTEINE,[14] that mostly addresses the Spanish-speaking community interested in this field.

4. Development of training plans in information literacy in Spanish university libraries

It can be safely said that in Spain it is in university libraries where the skills in the use of information have reached the maximum development. This is due to several reasons. In all probability the most important is that these are libraries that offer the highest level in electronic resources. It is well known that in the last years the scientific and technical information is basically electronic information: data bases, scientific journals, e-books, etc. The Spanish university libraries allocate a large amount of their resources to offer these resources on-line.

Digitalizing information makes it rather easy to access patents, studies, conference papers and many other types of information with an academic or scientific interest. The electronic information offered by university libraries

10 Available in: <http://travesia.mcu.es/S_ALFIN/index.html> [visited: 10-01-2008].
11 Available in: <http://groups.yahoo.com/group/alfincat> [visited: 10-01-2008].
12 Available in: <http://www.cobdc.org/grups/alfincat/mdex.html> [visited: 10-01-2008].
13 Available in: <http://www.rediris.es/list/info/alfainfor.es.html> [visited: 10-01-2008].
14 Available in: http://doteine.uc3m.es [visited: 10-01-2008].

(through subscription or free access) could certainly be much more exploited by its potential users; but either the ignorance of their existence or the lack of information skills, or even simply the university pedagogical model, do not allow for an intensive use of all these resources.

On the other hand, the exponential increase in the information available means that, theoretically at least, a student, professor or researcher has today at their hand massive amounts of information beyond what can be found in paper.

Likewise, the intensive use of information resources and of information technologies reveals some information deficiencies by students at the time of communicating the results of academic research (course papers, scientific participation in universities, etc.). They mostly arise from lack of training in the methods of scientific work. Thus, a large part of the student papers are but copy and paste what they found on the web, making plagiarizing a common habit. They hardly cite, and when they do cite, they do it wrongly. In the worst cases they deliberately hide the original source.

The Spanish university libraries, well aware of all these problems, have for some time introduced training in the use of information, starting with the classic courses of introduction to the library and to its sources of information. A very recent study (Somoza-Fernández, 2007) shows the findings of a poll carried out in the seventy Spanish universities. The rate of responses to the poll was 68%, which provides a very interesting global perspective as to the policies in information literacy of Spanish university libraries.

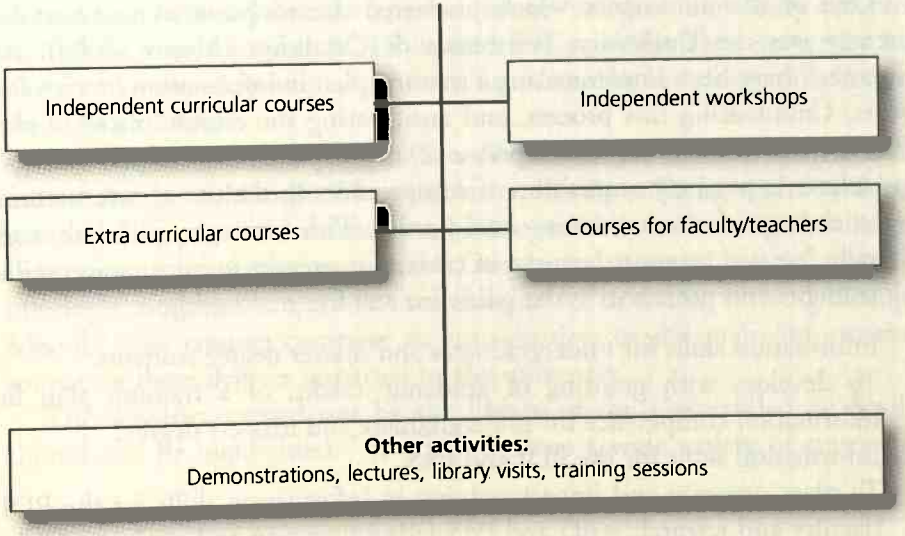
The study found that 92% of the universities that responded to the poll has some kind of activity related to user training. But a difference should be ascertained how far the professional differentiate between classic bibliographic instruction and presentations of services and library collections from training in information literacy. This ambiguity is debated not only in Spain. The conceptual controversy over what "information literacy" is may be encountered in the professional literature of Europe or the United States.

Similar studies, like the one carried out in France (Noël, 1999), where the information literacy level reaches a 43%, reveal a tendency to increase the interest university libraries have in developing information literacy training. Comparison with the situation in other European countries, as it appears in the professional literature (Virkus, 2003) ensures that information literacy in Spanish libraries is more or less at the same level than other countries of their area. Its further development, however, seems hindered by the very structure of the university and by its methods, such as the excessive presence of the "master class" and reliance on memory learning (Gómez-Hernandez, 2003).

The establishment of information literacy activities in Spain has started from its basis- that is, the university libraries themselves, which assumed the need to carry out this training. Gradually they have been defining the necessary actions in their sphere. It can be seen from the study mentioned above, where we find that 73% of the Spanish universities participating in the poll declared that they had increased their information literacy activities during the last two years (Somoza-Fernández, 2007).

An extended and standardized training is not inserted in Spanish higher education. That is why libraries take advantage of all the possibilities at hand to impart training within the legal and academic framework in which they operate. Training in our libraries is therefore imparted in the modalities stated in international suggestions (Lau, 2004):

- Courses organized by the library, of different periods, with or without granting of credit.
- Training modules, imparted within the standard university courses, on request by professors.
- Optional courses within a major, or degree.
- University Extension courses.



Fuente: Lau, Jesús, *International guidelines on information literacy: a draft proposal.*

Taking into consideration the needs each library has observed, different training plans have been designed which are not nowadays centralized, and can only be called "example good practice".

5. Examples of good practice in Spanish universities

Just as we said, information literacy in our libraries has not resulted from a planned effort but from the sum of individual initiatives of the libraries. These actions have generated an intense exchange of a tendency experience in conferences and professional gatherings of a substantial number. It may be said there is on the rise to promote plans of training in information literacy skills.

Almost all the Spanish universities - as we said before - has some activity or other which may be described as training in the use of information. Those programs range from the most basic (consult the catalogue, library services, etc.) to full courses in information literacy, with intermediate levels in between, like introduction to information sources (Pasadas, 2005).

Not all those experiences have found a place in writing, with due circulation in professional journals and conferences. Consequently, in this paper we must restrict ourselves to those experiences adequately described.

One of the universities which pioneered the adoption of information literacy was the Universitat Politècnica de Catalunya (Mestre, 2004). Its libraries[15] have been implementing a training plan in information literacy for years. Culminating this process, and anticipating the establishment of the EAHE, this library has developed a strategic plan. One of its strategic guidelines is precisely acquisition of competences in the use of information by members of the university community. This strategic guideline says literally "we will promote learning in cross competences in information skills by students and professors". The guideline sets five main goals:

1. Information skills for undergraduates and master degree students.
   To develop, with granting of academic credit, of a training plan in information competence for undergraduate and masters degree.
2. Information skills for the PDI and PAS.
   To plan, organize and impart training in information skills for the PDI (faculty and research staff) and PAS (administration and service staff) in

[15] Available in: <http://bibliotecnica.upc.es> [visited: 1-01-2008].

cooperation with the ICE (Instituto de Ciencias de la Educación), the OFA (Oficina de Formación) and other units of the UPC.

3. Conversion to virtual, learning programs and other didactic materials.
   To work out, update and disseminate didactic materials (learning programmimg, user's guides, etc.) in order to develop and extend formation to all other libraries and develop self-tutoring among users.
4. Specializing of librarians in charge of tutoring.
   To promote recognition for the tutoring librarian at the UPC, and develop the knowledge, necessary skills and abilities to carry out the tutoring activities.
5. Cooperation and leadership.
   To promote, plan and coordinate actions and connections with other university libraries, consortia and networks so that learning in information skills is a key cross competence for the development of university studies within the EAHE.

To reach those goals, the library of that university has already a specific plan for implementing - in those new courses arising from the EAHE - a design of tutoring based on the new university degrees: degree, master and doctorate. The plan was presented to the corresponding faculty members. It should be mentioned that, as far as the master's degree, a majority accepted to include 1 or 2 credits ECTS in information skills. That university has likewise developed its virtual platform for education in information literacy through Moodle.

The Universidad de la Laguna (Tenerife) is another university which takes full advantage of Moodle. That university, besides offering traditional user tutoring (like presential courses, etc.) has opened an interesting path in the conversion of its tutoring to virtual.[16] Conversion to virtual tutoring requires offering a complete set of on-line tutorials, as well as distant tutoring through Moodle. The courses compose an introduction to the main information sources in those degrees imparted by the university.

The activities carried out by the library of the Universidad de Sevilla should also be highlighted.[17] It offers its users a wide variety of courses in

[16] Available in: <http://www.bbtk.ull.es/servicios/formacion/fenlinea.asp> [visited: 1-01-2008].

[17] Available in: <http://bib.us.es/aprendizaje_investigacion/formacion/index-ides-idweb.html> [visited: 1-01-2008].

information literacy. It should be mentioned that its courses are presented to the user structured and organized in academic cycles, which allows the student to choose the course most suitable to his particular needs in a specific academic year. Three-credit courses[18] offer a complete training, including aspects as necessary as ethical considerations (plagiarizing, etc.) or the use of bibliographic managers (Procite). This training is offered through the platform WebCT. All those new activities require adequate spaces within the library in order to effectively carry out the tutoring. An example could be the specific spaces already provided for tutoring in the new building of the library in that university (Celestino, 2006).

The University of Málaga considers it strategic to have a training plan in information skills, if they are to offer quality services according to the needs of EAHE. To this end it implements its Plan de Formación de Usuarios (Plan FORUS) (García, 2006) in order to develop several initiatives. One of them is a tendency common to other universities, namely, the promotion of a virtual platform for learning through Moodle.

A project designed by the University of Granada should also me mentioned: the educational portal *e-COMS (Electronic Content Management Skills)*.[19] The creators of this website offer an on-line tutorial of public access which allows the information user to acquire different basic competences in the search for information (Pinto, 2007). Also from the same university we hear of a complete course in information literacy at the Psychology Department.

Other places where different experiments in information user training have been carried out are the Universitat Pompeu Fabra, Universidade de Vigo, Universidad de Murcia or the Universidad Nacional de Educación a Distancia.

Information literacy is therefore a very extended service in Spanish universities. It now waits to be inserted formally among the contents in university degrees which are now transforming in the direction of securing for university students the acquisition of these skills so necessary for developing in a highly technological information environment.

[18] It refers to the present value of the credit, not ECT. 1 credir equals 10 hours.

[19] Available in: <http://www.mariapinto.es/e-coms/#> [visited: 1-01-2008].

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INFORMATION LITERACY FROM THE LEARNER'S PERSPECTIVE A UK STUDY

*Susie Andretta**

Abstract

This chapter proposes an alternative approach to the skills-driven information literacy education that is currently dominating the current Higher Education (HE) sector in the UK.

This alternative strategy is based on the following three claims. First that information literacy is the foundation of independent learning and has long been associated with national and international lifelong learning initiatives (Abid, 2004; Bundy, 2004; Andretta, 2005). Secondly that information literacy is a multi-faceted phenomenon operating as the functional literacy for the 21st Century (Andretta, 2007), and as such it goes beyond the remit of the library (Bundy, 2004). The third claim, which gives the title to the chapter, proposes that variation in the way this phenomenon is experienced by the learner must be the starting point of any information literacy provision (be it social, educational or work-related). This final claim is based on the Relational model of information literacy (Bruce, 1997; Lupton, 2004; Edwards, 2006; Bruce *et al.*, 2006; Andretta, 2008 in press) applied to a study of post-graduate students at the School of Information Management, London Metropolitan University, UK. To familiarise the reader with the Relational model a brief account of this is given here, while the findings from the study demonstrate that by starting from the point of view of the learner information literacy can become a powerful pedagogical tool and fulfil its role as the catalyst for educational change (Bruce, 2002).

1. Introduction

Before we explore the claims made in this chapter it is necessary to articulate the two main tenets of information literacy. First of all, this phenomenon is

* London Metropolitan University, London - United Kingdom

seen as the foundation of independent learning that has long been associated with national information literacy frameworks (ACRL, 2000; Bundy, 2004), and international lifelong learning initiatives (Prague Declaration,[1] 2003; Alexandria Proclamation,[2] 2005). A detailed analysis of the information literacy policies promoted by the literature goes beyond the scope of this chapter and is covered in other publications (Andretta, 2005 and 2007). Here, it suffices to stress that information literacy in the Prague Declaration "is firmly embedded in the process of lifelong learning and valued as a human right." (Andretta, 2007, p. 2). While the Alexandria Proclamation "depicts this phenomenon as an enabler of individual and collective development, and ultimately as a promoter of an empowering social environment" (Andretta, 2007, p. 2). It follows that information literacy is a multi-faceted phenomenon operating at a social level as:

> *"[...] the functional literacy for the 21st Century [...] where the ability to read and write is complemented by the development of learners as producers of information (equipped with the necessary critical and reflective attitudes), and based on their competent use of a wide range of media."* (Andretta, 2007, p. 1)

From the perspective of the learner within an educational environment, information literacy is defined as a reflective research process that enables active engagement with any subject-based investigation. This approach is underpinned by the employment of information retrieval and evaluation strategies that apply generally across the disciplines. "Being information literate crucially involves being literate about something. Acquiring that literacy entails having first learned a set of generic skills that enable subject-specific knowledge acquisition" (Grafstein, 2002, p. 202).

The main implication that can be drawn from these points is that as the 'new functional literacy' information literacy goes beyond the remit of the library (Snavely, 2001; Grafstein, 2002; Bundy, 2004a) and assumes a wider educational role as the "pedagogical glue" (Andretta, 2007, p. 6) to counteract the "kaleidoscope of separate academic specialities" (Lorenzo *et al.*, 2006, p. 14), found particularly at Higher Education (HE) level. Having

[1] The full report of the Information Literacy Meeting of Experts held in Prague, 20-23 September, 2003, is available online. [Retrieved October 12, 2007] from http://www.nclis.gov/libinter/infolit conf&meet/post-infolitconf&meet/FinalReportPrague.pdf.

[2] A summary of the High Level Colloquium on Information Literacy and Lifelong Learning held at the Bibliotheca Alexandrina on 6-9 November 2005 is available online. [Retrieved October 12, 2007] from http://www.ifla.org/III/wsis/BeaconInfSoc.html.

established the link between information literacy and learning, this chapter presents two claims. First that information literacy education in the British HE sector reflects a pedagogical culture where learning is measured in terms of the skills and the amount of knowledge acquired. Secondly, that we need to combine the skills and knowledge approaches with the view of information literacy as the foundation of independent and lifelong learning. The second part of this chapter presents three information literacy strategies to achieve this goal. These strategies promote a combination of the Relational and the Learn-to-Learn perspectives devised by Bruce, Edwards and Lupton (2006) in the *Six frames of Information Literacy Education*, and practical examples of these three strategies are drawn from the author's information literacy provision at postgraduate level. The chapter concludes with evidence of these strategies' impact which results in the emancipation of the learners at personal, academic and professional levels.

2. Information literacy seen primarily as skills and content

A full interpretation of the research that substantiates this first claim can be found in a separate paper entitled *Information literacy education in the UK, reflections on perspectives and practical approaches of curricular integration.* (Andretta *et al.*, 2008). For the purpose of this chapter, a brief account of this research is presented here illustrating the main findings generated by two consecutive information literacy events organised by Staffordshire University in 2006. The first event was implemented during the conference *Information Literacy: recognising the need*[3] in May 2006, and involved a workshop with 150 participants. The second event consisted of a seminar held in November 2006 as part of the Information Literacy Community of Practice (ILCOP),[4] where the initial analysis of the data from the May workshop was presented and discussed. To test the claim that Higher Education Institutions (HEIs) see information literacy as information skills, and as knowledge about the information environment one of the objectives of the workshop asked the

[3] For further details see: http://www.staffs.ac.uk/infolitconf/ [Accessed 1 August 2007].

[4] The ILCOP initiative was developed by Staffordshire University as a follow-up from the May Conference and aims to run a series of seminars to share good practice and discuss new ideas in information literacy and learning with the university sector. [Retrieved October 6, 2007] from http://www.staffs.ac.uk/infolitconf/events/previous/index.php.

participants to identify the type of information literacy education promoted by their own academic institutions. It is important to stress that the participants from both events are well placed to comment on information literacy education in HE because they represent a mixture of staff from Library and Information Science (LIS) faculties, and academic libraries from a number of Universities in the UK, who are involved in information literacy provision.

As alluded to earlier, the list of statements used to elicit these institutional views was taken from the *Six frames of Information Literacy Education: a conceptual framework for interpreting the relationships between theory and practice* (Bruce *et al.*, 2006). This framework enables a systematic classification of information literacy education, although the frames can be used as blueprint for other educational scenarios. The Six frames approach proposes that perception of, and engagement with information literacy are influenced by how learning and teaching are defined, and from whose perspective (ie learner or educator), resulting in considerable variation in the way information literacy is perceived. For example, the Content frame (1) reflects learning and teaching perspectives where the former is defined in terms of accumulating knowledge about the information environment, and the latter is directed by the tutor rather than negotiated between tutor and learner. Just as the first frame measures the amount of knowledge learned, the Competency frame (2) assesses the types of information skills developed, and the level of competence achieved. By contrast, the other four frames are fully reflective on the impact of information literacy on the learners and their surroundings. In particular, they promote the central features of information literacy such as a Learning-to-learn attitude (frame 3), encourage self-evaluation and a personalised investigation of a subject (Personal relevance frame, 4), explore the social impact of, and solutions offered by an information literacy approach (Social impact frame, 5) and emphasise the relational aspect in order to engage the learners with the more complex elements of the information literacy experience (Relational frame, 6). At the May conference 73 participants selected statement 2 "Information literacy is a set of competencies or skills" as their first choice, showing significant preference for the Competency frame. While the most popular second choices were the Content frame illustrated by statement 1 "Information literacy is knowledge about the world of information" with 49 selections, followed by statement 2 with 21 selections. A more detailed analysis of these findings is given in Andretta *et al.* (2008). Here, it suffices to point out that the selection of these two statements demonstrates that the participants

identified Content and Competency frames as the most common approaches underpinning information literacy provision in British HE institutions. Not surprisingly, the participants of the seminar in November attributed the predominance of these two frames to "the institutions" need to measure students' academic achievement and prove accountability in terms of HEFCE[5] funding." (Andretta *et al.*, 2008). In addition, they speculated that if the same exercise had been done with university staff at a senior management level, then statements 5 (Social impact frame) and 6 (Relational frame) would have been the most popular choices. The reason for this is simply that these two frames promote information literacy as a social enabler, and as a complex interaction with information which reflect the institutional aims and mission statements of many British HEIs. This view implies that there is a gap between the interpretation of information literacy at policy level and at delivery level. The paper by Andretta *et al.* (2008) proposes a way of addressing this mismatch by presenting the accomplishments by Staffordshire University toward integrating information literacy into its the strategic learning and teaching policies.

3. The three information literacy strategies: combining the Relational and the Learn-to-Learn perspectives

These strategies have been devised as part of the author's doctoral research to enhance her information literacy provision by fostering the complex interaction between learners and information, (Relational frame), while at the same time developing an independent learning attitude (Learn to learn frame). A brief outline of these strategies is given here, followed by examples of their application in two separate modules delivered by the author since 2002 and 2006 respectively. The Applied Information Research (AIR) module[6] covers the research element of the MA in Information Services Management and the MSc in Digital Information Management, run by the School of Information Management at London Metropolitan University. While Facilitating

[5] HEFCE, or the Higher Education Funding Council for England, distributes public money to 132 universities and colleges in England that provide higher education. [Retrieved August 2, 2007] from http://www.hefce.ac.uk/aboutus/history/.

[6] AIR is supported by a dedicated webpage available online. [Retrieved October 6, 2007] from http://www.ilit.org/air/indexair.htm.

Information Literacy Education (FILE)[7] is sponsored by London Health Libraries[8] as a Continuing Professional Development (CPD) course for their Learner Support Programme (LSP). This course is also accredited as a 20 credit postgraduate module by London Metropolitan University.[9]

Strategy One: Start with the learner-information relationship and develop a customised information literacy profile for each learner.
The first strategy proposes that information literacy provision should focus on the initial relationship between the learners and the information they interact with. In other words, it is imperative to establish from the outset what the learners 'don't know' in order to stimulate their motivation, and by implication, establish what they 'do know' to foster their initial confidence. This is achieved by employing a diagnostic activity that produces a detailed information literacy profile for each learner (Andretta, 2005; Andretta, 2008 in press).

Strategy Two: Devise learning outcomes that make the learners create, rather than just find information to encourage ownership of learning (by implication internalise the meaning and expand the personal knowledge base).
The most effective way of achieving this strategy is to formulate learning outcomes based on real-world and problem-solving activities (Lantz *et al.*, 2006; Andretta, 2005; Andretta, 2008 in press) that enhance the learners' personal, academic and professional development.

Strategy Three: Devise assessments that facilitate reflection of information practice through the evaluation of the outcome of learning.
Reflection is subdivided into reflection 'in action', promoted by formative assessment strategies that evaluate progress, while reflection 'on action' is undertaken through summative assessment strategies evaluating the overall information literacy and learning experiences. (Hughes *et al.*, 2007, p. 68; Andretta, 2008 in press).

[7] FILE run for the first time between January and May 2007 with a cohort of 13, with the next cohort of 12 participants planned for January to May 2008. This course is supported by a dedicated webpage available online. [Retrieved October 6, 2007] from http://www.ilit.org/file/indexfile.htm.

[8] [Retrieved October 6, 2007] from http://www.londonlinks.ac.uk/.

[9] Full details of this module are available online. [Retrieved November 18, 2007] from https://intranet.londonmet.ac.uk/prog-plan/postgrad-line/modules/cm/cmp071.cfm.

4. The three strategies in AIR

Strategy One: start with the learner-information relationship and develop a customised information literacy profile for each learner.

In AIR this strategy is accomplished through the application of an investigative task to illustrate the students' level of competence in research, and reveal their information literacy attitude. The resulting information literacy profile is produced by the combined process of completing a brief entry for an encyclopaedia and receiving, after submission, feedback from the tutor on the areas of strength and weakness they should be aware of. The details of the task are presented in Example 1.

Example 1: Information literacy profile for AIR
(Extract from the guidelines to the encyclopedia entry task)

Write an entry of no more than 250 words to provide a definition of qualitative or quantitative research and how this fits in with the current role of information professionals.

Email your entry to one of the AIR tutors for comments. The entry must be written in your own words and any direct or indirect quotes should be referenced using the Harvard method.

This diagnostic exercise is very effective in identifying those students who lack critical thinking associated with an information literate attitude (Andretta, 2005). This point is illustrated by Example 1a[10] showing the entry a student from the 2006 cohort. First of all, she fails to operate within the given brief of examining the qualitative research approach from the perspective of the information professional, and consequently does not identify the audience this entry aims to inform. Secondly, none of the claims made are supported by references, thus questioning the reliability of the sources used, and the accountability of the views she presents. Thirdly, her style is colloquial and unclear, showing unfamiliarity with academic writing due to the fact that she had been away from education for a long time. By making the student aware of these problems at the beginning of AIR she was able to address them in time to pass the module.

[10] To distinguish between the tutor's comments and the students' text the feedback from the tutor is shown in italics, while the students' work is shown in normal text, while text that is underlined illustrates the part of the sentence the tutor is commenting on.

Example 1a: Extract from an encyclopaedia entry
Tutor's feedback: you make some relevant points but do not use any reference to support these and do not examine the impact of a qualitative research approach on information professionals – these were required by the brief given. Use of inappropriate style and unclear claims – I am rather concerned about the lack of substantiation of this entry. Read the guide on referencing[11] *and make sure that, from now on, you fully reference your points as the validity of your arguments depends on this.*

Definition of qualitative research (how does this fit in with information professionals?)
Qualitative research can be in bits of pieces of almost anything (*colloquial style*). Data can come from words, images, impressions, gestures, or tones which represent real events or reality as it is seen symbolically or sociologically (if people believe them to be real). Information professionals use unreconstructed logic to get at what is really real (*meaning?*) - the quality, meaning, context or image of reality in what people actually do, not what they say they do (as on questionnaires). This also means that there are no rules and prefabricated methods or reconstructed rules (*unclear*), terms and procedures should not be used to try and make research look tidy. (*this paragraph makes a number of claims all of which are not supported by references*)

No list of reference?

Strategy 2: Devise learning outcomes that make the learners create, rather than just find information to encourage ownership of learning (by implication internalise the meaning and expand the personal knowledge base).

To make the exercise as 'real' as possible AIR requires the completion of a funded research proposal based on the application form for small grants used by the AHRC.[12] Simply put this form requires the students to produce a detailed plan of their project, including: personal details and title of the proposal, a break-down of the budget and of the sum required to implement the project; brief accounts of the literature review and the scheme of research, together with detailed plans for the dissemination of the project's findings; an overall schedule and a supporting personal statement. The intention here is to achieve validity and transparency in research, while at the same time develop investigations that are innovative and sustainable. These combined research features add value to the proposals, a crucial factor in the highly competitive nature of the funded research environment. To achieve these aims the learning outcomes for AIR are articulated as follows:

[11] This is a basic introduction to referencing, using the Harvard method, produced by the author to help AIR students improve in this area. The guide is available online. [Retrieved October 21, 2007] from: http://www.ilit.org/dissertation/files/refbasicguide.doc.

[12] The Arts and Humanities Research Council funds research and postgraduate study within the UK's higher education institutions. [Retrieved October 12, 2007] from http://www.ahrb.ac.uk/.

1. Design a research project exploring an issue relevant to the information profession in support of an application for funding.
2. Identify and evaluate relevant literature in order to contextualise the research proposal.
3. Select research strategies appropriate to the nature of the proposed research project.
4. Communicate the various aspects of the research project using a range of dissemination strategies.

In addition, the oral presentation develops the ability to communicate effectively with an audience using a variety of media. This demonstrates a clear example of 'real world' assessment, and a number of students who operate as information professionals in a range of information sectors comment on the benefit of transferring this newly developed communicative competence to their professional practice. The following quote is from a librarian working in an academic library:

> *[...] I find myself now using those transferable skills [from AIR] [...] for instance there is a staff conference this month [March] and I'll be presenting with some other people as well. I have to do some kind of literature review on [subject] and [the assessed presentation for AIR] helped. [...] because [otherwise] it would have been the first time I did a presentation.* (Interview transcript)[13]

Similarly, extracts from the students' feedback[14] at the end of the module illustrate that overall AIR helps them develop a research attitude that is embedded in academic and professional practices, resulting in increased confidence at both personal and professional levels:

- Applied Information Research was an area which I was new to so at first I found the module daunting. However, I quickly found the work interesting, as well as challenging. Overall this module has given me the confidence to undertake research and present my proposal.
- I highly recommend the Applied Information Research module either as preparation for study at master's level, or a stand-alone continuing professional development course for information professionals.

[13] The interview transcripts used in this chapter are taken from the author's doctoral research.

[14] The extracts are taken from the feedback produced by the AIR cohort 2006/7. The original questionnaire is available online [Retrieved October 12, 2007] from http://freeonlinesurveys.com/rendersurvey.asp?sid=j34w2dte7jxildk242758.

- The module is based on students developing their information literacy skills. They are encouraged through reflective learning to develop critical thinking and apply the theory to real situations. It's up to the students to engage with the opportunities, when they do the learning can be profound.

Strategy 3: Devise assessments that facilitate reflection of information literacy practice through the evaluation of the outcome of learning.

AIR promotes reflection 'in action' and 'on action' using the Action Research approach (Edwards and Bruce, 2002; Hughes *et al.*, 2007) involving a cyclical process where "Each cycle has four steps: plan, act, observe, reflect" (O'Brien, 1998 cited in Andretta, 2004). The assessment for AIR consists of two components geared towards formative and summative assessment respectively:

- Oral presentation[15] (5 minutes in length) of the preliminary research proposal to an adjudicating panel (composed of the staff who deliver AIR). The presentation occurs approximately six weeks prior to the submission of the written proposal and the students receive detailed feedback from the panel on their performance, as well as the quality of their proposals. Reflection in action is encouraged by stressing the importance of this feedback and the extent to which the students take it on board when writing the final proposal.
- A written proposal[16] outlining a research project in an area that is relevant to applied research within an information environment. In this component reflection on action is promoted by a combination of the students' evaluation of their own research practice, peer-based feedback, and activities promoting critical appraisal of research proposals produced by previous cohorts.

Students' feedback on the written proposal shows that this component helps them develop: "[...] an appropriate research design (ie all the activities that ensure transparency and measurability of the investigation, including development of research objectives, selection of research approach, methodology and sampling strategies)."[17]

[15] Guidelines for the oral presentations are available at: http://www.ilit.org/air/files/airpresentguidelines.doc Retrieved October 21, 2007.

[16] The application form is available online. [Retrieved October 21, 2007] from http://www.ilit.org/air/files/airproposalform.doc.

[17] Extract from a student's feedback, AIR cohort 2004.

Others students from the same cohort also recognise that AIR equips them with the ability to produce 'systematic research':

> *It has opened my eyes to "why" in so much of my research practice, allows me to be much more aware of the information found – its validity. Again, AIR has given me structure in my research practices. There is now more of a plan to follow; looking at the breadth vs. depth, research strategies, literature reviews, sampling, evaluation. This will allow my research to be more complete and concise.*[18]

Furthermore the impact of AIR goes beyond the students' academic practice, and in particular, it affects the professional standing of librarians working within the academic sector:

> *I work in a postgraduate library so doing a thorough research module like AIR will help me to help students at my school at the enquiries desk when they have queries relating to their dissertations. AIR will also help me to do a relevant action research study that will raise [my professional] profile.*[19]

A similar positive impact is expressed by those students who operate as managers within the public library sector, where the research attitude developed in AIR supports enhanced dissemination practices by promoting evidence-based information services:

> *As an information manager I feel more confident in researching and supplying current information to users (individuals, groups, business, councillors, senior managers). I also feel that I have the expertise to provide proposals to improve the service through comparisons with other information providers and following examples discovered through research. I am also more confident with bidding for funds.*[20]

Finally AIR also makes the students aware of the lifelong learning impact of such a reflective approach:

> *[AIR] will have a big impact on my information practice. It has taught me so many useful skills, eg how to gain funding and how to assess and evaluate other research in order to improve services and gain a better understanding of the environment. It has taught me that there is a lot more to learn in the profession and that it is ongoing and important to keep up-to-date and keep researching. I think it is essential for any research-based course and critical for the information profession. I will most certainly be taking ideas away from this module and using them throughout my career.*[21]

[18] Extract from a student's feedback, AIR cohort 2004.
[19] Extract from a student's feedback, AIR cohort 2004.
[20] Extract from a student's feedback, AIR cohort 2004.
[21] Extract from a student's feedback, AIR cohort 2004.

5. The three strategies in FILE

Strategy One: start with the learner-information relationship and develop a customised information literacy profile for each learner.

The diagnostic exercise in FILE adopts a different approach from AIR. This is because in AIR the diagnostic strategy determines the initial information literacy profile of the learners in relation to their own research practice, thus revealing personal and academic information needs. FILE, on the other hand, aims to develop (or enhance) the role of information literacy facilitators. Therefore, the diagnostic strategy takes into account the initial position of the facilitators as learners, influenced not only by what they know, or don't know about information literacy, but also by the information literacy profile of the users they support. As a result, the diagnostic task in FILE draws from the personal statements produced by the participants during their initial application, outlining their expectations of the course. The additional input to a pre-course online survey[22] generates data on the participants' preferred learning style, their training background, and a detailed profile of their users. To ensure that the participants appreciate the importance of this diagnostic strategy within the process of facilitation, the data from these activities is used to draw up an evaluation of their own competences, together with an outline of their expectations of the course. This evaluation is assessed as the first component of an electronic portfolio (e-portfolio), and feedback from the first cohort of FILE confirms that the participants fully grasped the need to adopt this strategy:

> *Increased competence came through a greater understanding of profiles of different audiences and their different approaches (the six frames of information literacy); this led to more focussed learning outcomes and selection of content.*[23]

Example 2 shows the guidelines of this first component which list the areas to be reflected on, while the text in brackets identifies the background data informing the information literacy profile.

Example 2: Information literacy profile for FILE - Extract from Component 1 of the assessed portfolio

Write 300 words max addressing the following:

1. Your own expectations of FILE contextualised within your current training experience. (Based on the personal statement in your application form).

[22] Available online. [Retrieved October 8, 2007] from http://freeonlinesurveys.com/rendersurvey.asp?sid=n1cv568kep1cj2t240701.

[23] Extract from Component 5 produced by a participant from the 2007 cohort.

2. Users' profiles - and by implication their diverse information needs (based on the users' profiles given in the online survey).
3. Learning perspective - Your perspectives on what constitutes effective learning and how your view/experience of learning affects your role as facilitator of information literacy (based on the online survey).

Recent communication from another FILE participant also shows that the diagnostic approach is fully embedded in her current information literacy practice: "I continue to use all sorts of diagnostic activities to better target my training as well helping my trainees identify what they do and do not know. This has been very, very useful."[24]

A more detailed evaluation of the themes that emerge from the information literacy profiles produced by the first cohort of FILE is given elsewhere (Andretta, 2008 in press). Here, it suffices to say that the participants professed a preference for active learning for themselves and their users, involving demonstration followed by practice and reflection. In addition, the participants expressed a willingness to engage with FILE based on the need to enhance or develop their competences in information literacy facilitation and address the challenges of user diversity.

Strategy 2: Devise learning outcomes that make the learners create, rather than just find information to encourage ownership of learning (by implication internalise the meaning and expand the personal knowledge base).

The FILE course aims to equip information professionals in the health care sector with the competences and the confidence required to produce portfolios of learning resources that foster information literacy practices by a wide range of diverse user groups, consisting of:

- Home care workers with wide ranging information needs focusing on health issues within the domestic and personal environments.
- NHS support staff needs support in developing tool literacy and in some cases basic literacy.
- Clinical researchers are more interested in legislation and information on the management of clinical studies.
- Perioperative staff including diverse professional groups from nurses to

[24] Extract from email correspondence between the author and a FILE participant, received October 24, 2007.

surgeons, information on patient-care required, online-based training preferred due to lack of time.

The resources created during FILE are available online via individual e-portfolios[25] to encourage sharing amongst the authors, and enable further dissemination of these to a wider health-information community of practice. The second strategy is therefore articulated by the following learning outcomes:

1. Identify diverse information literacy requirements of the users you support.
2. Develop a learning strategy that appropriately addresses the needs of a targeted group of users.
3. Facilitate a range of information literacy activities.
4. Reflect on the process and the impact of information literacy practice on your professional development.

The feedback from a FILE participant shows that this strategy promotes successful sharing of information literacy resources developed for the e-portfolio:

> *[...] I've just run a training session for library assistants on searching the databases such as Medline. Used my Boolean presentation as part of it [Component 4 of FILE] and bits of both Jane's and Louise's presentations around selecting search terms and introduced the citation matcher into my session for the very first time. All down to FILE and my wonderful colleagues! One lady [who attended the session] said she learnt more this afternoon than in the last 3 years together and has been 'inspired'.*[26]

Strategy 3: Devise assessments that facilitate reflection of information literacy practice through the evaluation of the outcome of learning.

Continuous professional reflection underpins all of the components of the e-portfolio, including: Professional Development targets (Component 1), Group-based presentation on an information literacy programme targeting a specific group of users (Component 2), Individual presentation of an information literacy programme to address the needs of a targeted audience, it should be noted that this group of users is different from the one covered

[25] Details of the e-portfolios produced by the 2007 FILE cohort are available online. [Retrieved October 8, 2007] from http://www.ilit.org/file/eportfolios07.htm.

[26] Extract from email correspondence between the author and a FILE participant received March 15, 2007 (cited in Andretta, 2008 in press).

in the team presentation (Component 3), implementation and evaluation of an information literacy session (Component 4), overall evaluation of FILE in meeting the professional targets set at the beginning of the course (Component 5). A full account of these components is given elsewhere (Andretta, 2008 in press). For the purpose of this chapter is important to stress that the assessment in FILE includes formative and summative assessment strategies as the assessment deadlines span the entire length of the module and the participants are encouraged to assess their information literacy practice through outcome evaluation. The components are grouped here into examples of facilitation and evidence of reflection:

- Examples of information literacy facilitation include PowerPoint presentations delivered individually and as part of a team. The group-based presentation is accompanied by individual reflections on the quality of delivery of the presentation. The individual presentation articulates the learning objectives and outcomes for a specific information literacy activity and the type of audience addressed. This is complemented by evidence of a practical training session implementing the activity and an evaluative strategy to assess the learning outcomes of the users who have participated in the session.
- Evidence of reflective practice is exemplified by accounts of professional reflective practice developed in Components 1 and 5, and informed by peer review strategies evaluating the learning resources produced and presented to the group (Components 2 to 4). These reflections are collated into the final evaluation of FILE in Component 5.

The participants' evaluation of their development as information literacy facilitators is based on self-reflection of critical incidents as well as peer-assessed activities. It is clear that reflective practice leads to increased confidence as a facilitator and this is shown by the feedback from one of the FILE participants:

> *Increased confidence came from positive feedback on my presentation performance from other participants. The course offered the opportunity to practice, observe others, reflect and give and receive constructive criticism. Each presentation built on the previous one; lessons learned could be implemented without delay. Self-observation [the presentation for Component 3 was also videoed] was particularly encouraging.*[27]

[27] Extract from Component 5 produced by a participant from the 2007 cohort.

The use of video technology to record the presentations for Component 3, alluded to by this participant, was also described as particularly beneficial by the rest of cohort who identified three main types of impact. These are fully examined elsewhere (Andretta 2007a, p. 10) and summarised here as:

- Confidence inducing: "[seeing the recorded presentation] has increased my confidence as I found I am not as bad a presenter as I thought."
- Enhanced their professional gravitas: "[In the video I] came across as / looked more confident than [I] felt. Surprised by how well articulated, clear, easy to follow it was. Increased confidence that audience would take me seriously because I appeared to have credibility."
- Fostered reflective practice: "[...] although I did not particularly like to watch myself presenting, it helped me to note points of my strengths and weaknesses in giving that presentation."

6. Empowering the learner

The three information literacy strategies presented in this chapter demonstrate that by starting from the point of view of the learner information literacy can become a powerful pedagogical tool and fulfil its role as the catalyst for educational change (Bruce, 2002). Secondly that by encouraging the creation of information one fosters the internalisation of meaning and the consequent ownership of learning which is consolidated by continuous reflection (Andretta, 2008 in press). In other words we promote "the never ending cycle of practice and reflection" (Andretta, 2005, p. 136). In this concluding section we propose that the aggregate impact of these strategies leads to the development of information literate attitudes that enhance the learners' professional practice as information researchers (AIR) or as information literacy facilitators (FILE).

7. The transforming impact of the three strategies in AIR

Increased confidence is measured in terms of the ability to deal with anxiety arising from the experience of a 'dead-end research'.

Student *[Having completed the AIR module] I feel more experienced about doing the research.*

Researcher *When you say you are more experienced would you explain that?*

Student *[...] I suppose the feeling that I had when [...] I couldn't find anything on women and the intranet. I thought, what am I going to do? I must be doing something wrong, [...]. You know, those sort of feelings, so going through that experience [...]*

Researcher *You felt Insecure?*

Student *Yes [...] which is normal. [...] Now I don't think it will have the same effect on me when I start to do more research. I am [...] more able to cope with [...] when things go up a blind alley [...].* (Interview transcript)

In this example, the relationship between the student and the topic is characterised by the two extremes, information overload on one hand, and information vacuum on the other. The implications here are that to counteract the information overload the student employs filtering strategies, while to address the information vacuum, she uses alternative keywords in an attempt to 'speak' the language of the collection searched. A further point can be inferred from this extract, namely that too much or too little information generate the same level of anxiety, although the causes of such an anxious state reflect different manifestations of the external horizon. This is in contrast with the view promoting information literacy solely as a way of counteracting information overload, rather than addressing the two extremes of the information continuum (ie not just too much, but also too little information).

In addition, the evaluative approach promoted by AIR sharpens the focus of research and validates the research direction:

[...] I am much more conscious of evaluating the validity of my sources. It's now on the tick list in my head. [...] Information literacy has helped me to sharpen my practices, because I was sort of aware of a lot of the bits, it just draws it together, oh yes I am doing this because [...]. (Interview transcript)

As a result of AIR one student reviewed her professional perspective, and identified information literacy education as a career path. This is a rather extreme shift from the total unfamiliarity about information literacy she expressed at the beginning of the module, to a clear perception of this phenomenon as a convergence of the librarian as an educator and learning.

Researcher *Can you give me an example of your [professional] expectations before and after the module [AIR]?*

Student *Well [...] I have thought more about [working with] the learning resource centre type, education type of direction.*

Researcher *User education?*
Student *YES*
Researcher *In what sector?*
Student *May be an academic library. There is a certain amount of convergence between the librarian and the learning resource centre, you know there seems to be a growing area and that's another thing that interests me.*
Researcher *So you are also interested in information literacy as a form of education?*
Student *I would say yes I have become more interested in it, yeah.*
(Interview transcript)

8. The transforming impact of the three strategies in FILE

The impact of FILE in terms of strengthening the status of the information literacy facilitator is evident from the comments made by the participants at the end of the taught part of the course "I have gained in confidence and now believe that I DO know what I am talking about!" (cited in Andretta, 2008 in press). Good practice in information literacy facilitation developed in FILE is also cascaded down to colleagues at work:

> *FILE has enhanced my professional practice. I will stress the importance of establishing the audience profile and level of information literacy, before setting the learning outcomes and preparing the content of the session, when I brief library staff assisting with training.*[28]

As mentioned earlier, in Component 5 the participants are asked to evaluate the impact of the course in meeting their original expectations and professional targets. The feedback drawn from their responses is extremely encouraging[29] and shows that the participants' experience went beyond the their expectations, demonstrating a realisation that information literacy is "more than just a set of skills", which in turn results in a change of their "approach to user education". Other benefits include the establishment of a supportive community of practice through "group bonding", and an exposure "to different techniques and methods of training others, both from

[28] Extract from Component 5 produced by a participant from the 2007 cohort.
[29] The quotes used in this paragraph are taken from Component 5 produced by a number of participants from the 2007 cohort.

the tutor and my peers." The resulting "competence and confidence in presenting information literacy training sessions" also enables the participants to transfer what they have learned during FILE to their professional practice: "[I] feel more confident in the preparation of training, setting out targets and evaluating [the outcome]. I have been able to take what I have learnt to my workplace and make improvements to the training offered there."

In addition to the initial positive impact of this course, the FILE participants have become involved in a number of initiatives long after the completion of the taught part of the course. Some began to promote an information literacy education policy in their institutions. In one particular instance this proactive approach:

> *[...] created quite a buzz [...] and 13 courses have signed up to be part of the pilot. It's early days yet and most of the academic staff find this term the busiest, but since the need was made explicit, the library has been able to move ahead with delivering some training online via Moodle and to succeed in having some courses integrate training into the course timetable.*[30]

While others have organised two information literacy events extending their newly found confidence as facilitators beyond the confines of the assessed portfolios. The first session called "Facilitating Information Literacy Education (FILE)" was delivered by four participants,[31] and aimed to promote the course to a meeting of Clinical Librarians and Information Skills Trainers (CLIST).[32] Some of the main points raised in the concluding part of this presentation are listed here to illustrate the empowering effect that FILE has had on the participants' perception of their own information literacy facilitation. What transpires from these statements is an assertive professional attitude and the importance of a supportive community of practice:

- Improved our reflective practice skills so that we can implement diagnostic testing and evaluate our training sessions more effectively
- Increased our confidence as IL (information literacy) facilitators

[30] Extract from email correspondence between the author and a FILE participant received October 24, 2007.

[31] The FILE presentation was delivered by: Claire Jones, Mary Last, Ziba Nadimi and Louise Wann, 24 April, 2007. The PowerPoint presentation is available online. [Retrieved October 17, 2007] from http://www.ilit.org/file/file07seminars.htm.

[32] CLIST is a group formed by NHS clinical librarians and information skills trainers working across the London region whose aims is to promote and encourage sharing of best practice among clinical librarians and information skills trainers. [Retrieved October 17, 2007] from http://www.london links.ac.uk/working_groups/clist_index.htm.

- The supportive learning environment (both tutor and colleagues) made us want to aim for higher achievements in getting the IL message across to a wide range of target audiences
- Inspired us to believe in our strengths
- Helped us to identify things that we do well in our IL practices and those that need improving
- Helped us to adopt more innovative teaching styles to fit with the learning styles of our audiences
- The introduction to the six IL frames was illuminating and helped us to address variation in learning levels
- Enhanced our presentation skills
- We learned a lot from our colleagues and found sharing resources invaluable in providing us with fresh ideas to use in our individual IL activities
- Our enthusiastic tutor helped us, among other things, to be more assertive in developing IL activities with a strong sense of direction

The second event consisted of an actual training session entitled *Searching: Steps for Success*.[33] This two-hour workshop introduced the formulation of an effective search within the context of Evidence Based Medicine, and it was aimed at information professionals who were new to healthcare libraries, or needed to refine their searching skills. The success of this workshop is evident in the feedback produced by its participants.[34] Responses to two specific questions of the evaluation completed at the end of the event are shown here to illustrate a high level of overall satisfaction with the training session.

The question 'What will you take away from the training?' elicited responses that stressed the relevance of the workshop's content and in particular mentioned the usefulness of the PICO method (Patient or Population, Intervention, Comparison and Outcome) in defining the four components of a clinical question:[35]

- I will take away a feeling of greater confidence in approaching databases

[33] The workshop was delivered by: Abigail Barker, Mary Last, Louise Wann, and Jane Willson, 6 September 2007. Full details of the four presentations, and of the activities run during each session, are available online. [Retrieved October 17, 2007] from http://www.ilit.org/file/file07seminars.htm.

[34] The workshop was attended by 12 library assistants.

[35] [Retrieved October 19, 2007] from http://jeffline.jefferson.edu/SML/helpaids/handouts/EBM_PICO.pdf.

and finding answers to more complex enquiries. I feel slightly better equipped to explain Boolean logic to users although I still find it difficult.
- Thinking about synonyms, PICO, planning a search.
- PICO structure to identify key concepts and formulate questions.
- Evidence based practice, PICO method, looking at concepts, working out what is important in answering a search.
- The info on PICO models was extremely useful. Good overview of searching.
- Clarity of search techniques.
- I feel I have some very useful core-searching skills which will be great to show to other colleagues and users of the library.
- It will enable me and give me more confidence in carrying out searches in the library.

When asked for an overall comment, the participants praised the quality of delivery which generated an overall enjoyable and useful learning experience about searching strategies:
- Most enjoyable, the short time span of training made it more focused and it was easier to concentrate on each topic with interest. Thank you!
- Excellent! Will recommend to others if done again.
- Friendly presenters and atmosphere.
- Very good introduction. Clarified some relevant and important aspects of medical searches etc.
- A good brief, but very informative guide to basics of searching.
- Really enjoyed the four presentations.

One participant commented that she would have liked: "[...] some hands on practice on databases using concepts taught." This view is very significant for a number of reasons. First it illustrates that the learner is ready to move to the practical stage, and apply the searching approaches learned during the workshop by querying medical online databases. Whilst the presenters recognised that in a two-hour workshop on the basics of searching the inclusion of a hands-on session would have been too ambitious, they conceded that this comment shows a need for follow-up sessions to cover the application of searching specific medical databases. It is undoubtedly a sign of successful facilitation when the learner asks for further training.

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