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CENTRUL DE CERCETARE PENTRU INFORMAŢIA DIGITALĂ
CERCETARE TEORETICĂ ŞI APLICATĂ

The SECOND INTERNATIONAL CONFERENCE in ROMANIA

on

Information Science and Information Literacy

CONFERENCE PROCEEDINGS

April 14th - 15th 2011, Sibiu, Romania

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Honorary President of the conference

Prof.dr. Constantin OPREAN

Rector of the "Lucian Blaga" University of Sibiu

Foreword

*The **Second International Conference in Romania on Information Science and Information Literacy**, Sibiu 2011, stands for a major event that gives the specialists in Librarianship and Information Science the great opportunity to meet in a friendly and proficient atmosphere.*

The Conference is organized by the:
***Central Library of the „Lucian Blaga" University of Sibiu** togheter with*
***The Library of the Romanian Academy** and*
***University of Bucharest - DigInfo Centre**.*

Guests :

Prof.dr. **Werner SCHAAL** - *President of the Lucian Blaga University of Sibiu*
Prof.dr. **Doina BANCIU**, *ICI-National Institute for Research and Development in informatics, Bucharest, Romania*
Acad. Prof. dr. **Florin FILIP**, *Romanian Academy, Bucharest, Romania*
Dr. **Ralf BRUGBAUER** - *University Library of Bayreuth (Bavaria), Germany*
Manuella BIDAUD – *Documentaliste AFPE -GIRFAS Bretagne – Centre Emmanuel Mounier Bruz Cedex, France, http://www.afpe.org*

TOPICS AND FOCUS

The main goal of this conference is to present and discuss the new trends in the following areas:

Information literacy

- *Modern approach in information literacy*
- *Changes of reading and writing in information literacy age*
- *Ethical use of information and plagiarism*
- *Scientometrics*

Education

- *Teaching information literacy and*
- *Developing the skills of the information literacy practitioner*
- *Lifelong learning and e-learning based on information literacy*
- *Reviewing the fundamentals of education and curriculum redesign*

Digital libraries

- *Libraries in digital age*
- *Quality evaluation of digital and classical libraries*
- *Data storage and databases*
- *Interconnection protocols for digital libraries*

Information science and technologies

- *Information theory*
- *Information retrieval*
- *Measuring the performance of document classification*
- *Data mining strategies for digital libraries*
- *Hypermedia in digital libraries*
- *Image processing for digital libraries*
- *Media conversion and digitization tools*
- *Interfaces: design and ergonomics*
- *Knowledge management.*

Scientific committee :

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- Radu PAŞTIU, *IT staff, Library of the LBUS*.

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Different tasks libraries have to perform in universities and scientific community. A short view on activities of german libraries

Ralf Brugbauer

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Abstract

From the Federal Republic of Germany, Ralf Brugbauer, Executive Director of the University Library Bayreuth (Bavaria), Honorary Senator of the Lucian Blaga University and member of the Board for Information Management of the German Research Foundation (DFG) will send a greeting to organizers and guests of the SECOND INTERNATIONAL CONFERENCE on Information Literacy in ROMANIA. He will give a short view on different tasks libraries perform in reseach infrastructure and education, in publication procedures and processing scientific (research-)data. He will throw a glance at the activities of the German libraries in this areas of work.

Changes in reading: some psychological aspects of Reading 2.0

Adam Sofronijević, Dejana Kavaja Stanišić
University of Belgrade, University library "Svetozar Marković"

Abstract

The book as a paradigm for the content that is passively presented to the consumer and reading as a paradigm for the intimate experience and individual cogitation of that content are changing, mostly because of technological and social innovations known as the Web 2.0. Emerging new quality in reading is described in the paper via Reading 2.0 concept. This concept is in turn contrasted with the concept of a Solitary reader that focuses on some aspects of the reading process as perceived in the past.

In this context some psychological aspects of Reading 2.0 are discussed in detail. Building on available research in text structure importance for cognitive processes during comprehension of scientific texts, paper discusses the role of interactivity and collaboration in changing readers' misconceptions. Various aspects of collaboration and interactivity are compared in regards to two different text structures in order to develop plausible scenarios for testing changes in readers' erroneous prior knowledge. Some examples taken from discussions originating in online communities of Serbia are presented in regards to defined scenarios. Differences in readers' reactions that arise from certain types of emotional investment in particular kind of misconceptions are discussed on basis of examples presented. Scenarios of librarians' participation in the process of changing readers' erroneous prior knowledge are discussed with emphasis on possibilities for collaboration and interactivity fostering and effects of such actions.

Paper advocates further research in this area by describing benefits that might arise from better understanding of discussed phenomena and by providing certain conclusions on research directions and possibilities.

Keywords: Reading 2.0, Solitary reader, Psychological aspects of reading, Changing readers misconceptions, Refutation texts, Online communities, Librarianship, Serbia

The future is already here – it's just not very evenly distributed.

William Gibson

1. Introduction

Web 2.0 technologies' dynamic development brings changes into every aspect of human endeavour. Collaboration and interaction are the name of the Web 2.0 game that changes everything from businesses and politics to cooking and culture. The book as a paradigm for the

content that is passively presented to the consumer and reading as a paradigm for the intimate experience and individual cogitation of that content are changing too. The authority and the stability of the codex are challenged by the possibilities of collaborative authoring and fast changing editions – frozen pictures of fluid books. In scholarly communication open access initiative and nano articles are challenging the journal article wheter in paper or electronic format. More copies are beening sold on Amazon as kindle than paper editions, more and more people are reading of phones, tablets and ebook readers. So how can it be that the reading is the same when everythnig around it has changed including the object contining text that is the focus of a reader's attention? Some things will probably never change: eye capture and the recognition of the symobls, comprahension of their mening as the words are recognised and the solitude moment in wich the mening sinks in. But if reading was only about this the world that we know wouldn't be the one we are looking at right now. Choosing of the text to read, object that carries the text, hand movements allowing for eyes to fixate on the text, eye movements sweeping the symbols, jumping over the parts of the text or slowing down for better comprahension, switching from one part of the text to complitely another in midst of reading, using hands and eyes to achieve this, chaning the object that carries the read text althogehter, interpreting the mening, evaluating the meaning, redefining the meaning after brief evaluation accoring to one's previous knowledge and experiances, connecting the comprahesion dots in following the prejudice we have on the meaning of the text, finindg out about parts of the texts that are more important then the others, reading aloud, reading in slowmotion, using hands and fingers to foster comprahension, evaluating time spent in reading, evaluating if we have achieved our goals in reading etc, etc. all of these activities do change when collaboration and interactvity comes into play. Therefore now we have to contamplate reading in different perspective than we used to do. To help in this concepts of Solitary reader and Reading 2.0 wil be presented and contrasted.

2. Reading 2.0 and Solitary reader

Various new possibilities in reading have emerged from technological and social innovations during the last few years. The position of libraries and the role of librarians have changed in regards to new realities arising in some interpretive communities across the world.

Until recently intimate experience and individual cogitation of content have been cornerstones of any description of reading. But to some readers collaboration and interactivity are becoming as important in many parts of the reading process. The selection of reading materials, reader's expectations, some aspects of the reading activity itself e.g. hand and eye movement, strategy of reading and finally the results of reading as well as total satisfaction and evaluation of the reading process by the reader are all changing through influences of social and technological innovations that foster interactivity and collaboration.

A new concept of reading – Reading 2.0 describes a process that is not only passive and individualistic. Reading 2.0 implies interactivity that blurs the distinction between the author and the reader and creates the new reality where instead of authoring principle we are comparing someone's contribution to the collaborative process of content creation and consumption. We use

the concept of Solitary reader to contrast Reading 2.0 and filter out of the reading process those characteristics that are most prone to change. Juxtaposed to Reading 2.0 the concept of Solitary reader should provide us with better understanding of reading process characteristics most affected by new possibilities in collaboration and interactivity.

Solitary reader describes a passive consumer who intimately experience and individually reflect upon the content presented to him/her. Solitary reader engages in the dialog with the author where the venue for this dialog is the text. This dialog is not interactive by its nature since the author has no chance of updating the text. We can describe Solitary reader as a traditional reader. Though codex is most associated medium for this kind of reading we may as well define Solitary reader reading process when based on text accessed via computer screen or even in some instances via other electronic devices. If no interactivity and collaboration exists when using desktop or laptop computers, e-book readers, tablet computers or mobile phones the reading process is traditional one and we may call the one practicing it Solitary reader.

Reading 2.0 is an extended set of characteristics describing the reading process when compared to Solitary reader. Generally those characteristics can be described as either interactive or collaborative. Interactivity in reading process is achieved by possibilities based on up-to-date technology in regards to influencing other readers by creation of new text that is additional to the original one or by changing and remixing the original text. Annotations and notes are direct products of readers' expressing themselves when reflecting upon the original text. We may add highlighted parts of the text to the same category, although they are not ''new'' text. They influence readers in the same way as notes although they are not at the same level of creativity and they always carry just one ambiguous message about the importance of the text highlighted. The ease, speed and comfort with which these can be made create qualitative change in comparison with possibilities for the same functions in codex media environment. Interactivity also involves other forms of text extension and change i.e. experimental forms of text creation by readers following the premeditated and given scenario or changes and remixing the text itself to a degree allowed by original author. Collaborative aspects of Reading 2.0 include influencing others about the text and creating additional contents. Influences may be direct or indirect. Indirect influences range from mere act of choosing a text, if count of readers of certain text is measurable and this measure accessible to other readers, to a wide range of recommendations. These recommendations may be in various forms of ratings assigned to a text by readers, most usual being one to five stars rating that may be assigned in seconds. Creation of additional contents may also happen in various forms: notes on certain parts of text that are not visible along the original text, comments about a certain text as a whole, discussion about the text. This would include discussions on texts usually created in Web 2.0 environment of blog and forum technology or various forms of opinions on texts as a whole and available before buying or downloading a certain text.

Aspects of interactivity and collaboration that made essence of Reading 2.0 are of interest if available to a large enough group of readers by means of easy accessible, usually free and simple to use technology. Only when these conditions are met we can contemplate changes in reading of significant importance and define Reading 2.0.

3. The roll of collaboration and interaction in changing reader's misconception

Reading is all about finding out new things and creating opinions. If previous to the reading process a reader has an opinion on a certain subject meter it will without doubt influence the reading process. At a more theoretical level Hans-Georg Gadamer [1] disputes even the possibility of non-existence of previous opinion on any subject meter. A large body of knowledge derived from empirical disciplines exists [2-5] on how previous knowledge influences the results of reading process. If a reader has a misconception regarding a certain issue, most usually a scientific one, then problems might arise with understanding of a text that brings opposite information [6-8]. The text can be presented via different text structures [9] of which we will for the purposes of this paper focus on refutation texts and nonrefutation texts. One can research online [12] and offline [11] results of reading process and combine different structures of the text with different previous knowledge of readers. In doing so referenced works have always dealt with reading process conducted traditionally i.e. by a Solitary reader.

When collaboration and interactivity are put into play the number of combinations for possible research activities grows fast. One example of such possibilities is conducting experiments with reading times methodology varying refutation and nonrefutation texts that include highlighted parts and comparing groups of readers that have various preconceptions on texts as a whole and/or highlighted parts. This should give us a better insight into the importance of interactive aspects of reading 2.0 and other readers' stance on importance of certain parts of the text. By researching texts with variations in the frequency of highlighted parts of the text one might reveal further important aspects of this issue. Also if we add newly created text available alongside the original one i.e. annotations and notes and possible combinations of these with highlighted parts and variations in frequency of both we may say we have stumbled upon a vast unexplored field. Offline research of interactive aspects of reading process might be interesting in showing if interactivity in reading upgrades readers understanding of text and recollection capability in regards to both refutation and nonrefutation texts and various previous levels of knowledge of subject meter of readers. Readers' reaction to other readers' highlights and notes in regards to offline results of reading may be of utmost importance for educational process design and educational environment choosing. At this stage of theory and research of reading process that involves interactivity and collaboration investigation into results of original text rewriting and remixing by interactive users is too complex to predict. Additional light may be shed on collaboration in reading if offline results are compared for various sorts of other readers' recommendations. Would a reader give more attention to a text or to the part of a text that is highly recommended by numerous other readers of few other readers whose opinion he/she appreciates highly? Also a parallel online research on both reading times and comprehension might reveal dynamism of recommendation's appreciation change and it's importance for reading process. Results of such research might be interesting in showing if those collaborative aspects can improve results of reading process as well as they add value to the entering stages of this process i.e. text selection etc. Offline results research into collaboration in evaluation of reading process phase and contemplation of results of the reading process may be also interesting for improving understanding of how collaboration influence those stages of reading process. Does others readers' opinions can change our own opinion on reached aims and

expectations fulfilled by reading? Or do we just engage in exchange of thoughts that has no significant influence on our evaluation of texts that we have read? Some examples that we have collected in certain Serbian online communities might be illustrative if not conclusive for this. We also hope to further advocate the need of additional research in this area by presenting these examples.

4. Examples form the Serbian online communities

In order to illustrate various and rich possibilities for research that have been described we will present few examples of offline results of collaborative reading process as found in certain Serbian online communities. Discussions taking place in the forum technology environment provide good research material for our purposes. Readers are collaborating in exchanging thoughts and ideas about evaluation of texts read. By creating one fluid text in a form of a dialog they expose their assessment of reading results in regards to certain texts, mostly paper book editions, influencing each other in this process. We have pinpointed three various discussions from two various online communities regarding different texts and readers' misconceptions. In them we can pinpoint offline results of this collaborative reading process in changing readers' misconceptions.

First example is taken from a large online community gathered around the online forum of news company B92. This community is fairly heterogeneous in regards to their members' geographical location since a lot of members are from Serbia, but also as many are emigrants or of Serbian decent but from all over the world. The discussion we will analyze can be accessed at http://forum.b92.net/topic/17038-zaboravljanje-maternjeg-jezika/ and is about interpretation of reading of linguistics. Kick started by the idea that knowledge of mother tongue quickly deteriorates discussion soon focused on linguistics and interpretation of books read by participants. Soon they have found common grounds for discussion in books they all read in the past. By discussing certain issues a misconception of one participant was focused on. Collaboration in reading the same linguistic book helped this participant to refute misconception, a thing he couldn't achieve just by being Solitary reader of this book.

The second example is also from the same online community available at http://forum.b92.net/topic/50126-prijateljska-pomoc-srbije-bih/page__st__100. It is about the refutation of certain misconception regarding issues of economic politics. Prompted by the political issue discussion soon shifted towards the issue of economic collaboration in the Western Balkans region. One of the participants was misinformed about possibilities for this collaboration and further explaining of non refutation text that all of the participants have read in advance to the discussion helped him refute this misconception. Here we can see an example of how discussing reading process results can further understanding of the text.

Final example is available at http://forum.cars.rs/forum3/viewtopic.php?f=1&t=7979 an online community of automobile enthusiasts from Serbia. An issue regarding technical details that prompt usage features of certain car type has been discussed on basis of reading manual for this model. Obviously this was no refutation text and discussion on it helped one of the participants to

overcome his misconception. In this example we can see how poor understanding of the text read has been improved through the discussion with other readers.

We have presented some examples on how collaboration in reading have prompted better understanding of text read i.e. how offline results of the reading process have been improved in a collaborative environment. Such examples are illustrative and should be comprehended as a call for further research in this area since besides being an illustration examples themselves don't prove much.

5. The role of a librarian

Librarianship has always been about information creation i.e. bringing together data and the user that needs it. In a contemporary library data needed is buried under the pile of other data that has never been bigger in the history of librarianship. This is also true for data hidden inside the scientific text for example. Bearing with it all the necessary literature references and other formalities needed to prove various stakeholders the legitimacy of the text the scientific text today looks like a haystack with a needle in it representing a specific new idea or a discovery that should have been presented in the first place. Therefore if a librarians' job is described as information creator which is done by connecting user with needed data one can start thinking about what if data is not just the object, a book or a journal article? But what if the data needed should be pinpointed inside the text? Is there a role for a librarian? The sheer amount of object and areas of expertise available in a contemporary library makes it impossible for a librarian to be more then an educator and a provider. A librarian educator needs to show patrons how to use databases and implement their specific knowledge to find the data needed in them. A librarian provider needs to provide other users with specific knowledge extracted from users that have been using databases in past. Following this line of thought librarian might be also a provider of specific knowledge that pinpoints data inside the text. For this many preconditions are needed. Firstly the knowledge on how collaborative and interactive reading functions is needed. If readers are to bring the best out of one another in comprehending the text and furthering the whole of a reading process then a librarian who needs to benefit from this must comprehend how this works. Which aspects of Reading 2.0 foster innovativeness and which aspects further text understanding? Is there a function that might be slashed if we are about reading in education?

Other important issue for librarians is establishing a context or a framework in which Reading 2.0 can function. If not enough users are involved we can not say that changes in reading are significant for a certain interpretive community of library patrons. A role for a librarian should be in building collaborative environment by providing further services in a library. If a library becomes participatory institution collaboration among users will follow [13]. Transforming a virtual library, that in itself is a holy grail for most librarians today, into participatory institution is a very complex and time and money consuming job. And these resources are the scarcest in libraries today. But how grand a prize for achieving such a high goal must be. Providing patrons with self sustainable environment that can process any amount of data and help extract the needle out of a haystack. Some steps in this direction might be not so complex and far. Fostering usage of collaboration in

reading software for students and education of patrons in using them seems feasible even in time of economic crisis. Providing free software compatible with e-book readers for desktop and laptop computers and profiting from their note and highlight sharing capabilities. Providing cheap and easy ways for patrons to participate in tagging paper book editions i.e. labeling shelves for returned books with preconceived tags and making sure librarians are adding theses tags in online public access catalogue so that the patrons may profit from wisdom of other readers crowds. But first and foremost librarians need to be the first in the line of life long education and always ahead of the users in general knowledge on information creation trends and possibilities. Subject specific knowledge is far out of reach of librarians since the time when subjects have become so specific. Patrons' expertise will be always ahead of librarians' one in this filed. But librarians need to learn every day how to use technology in order to encapsulate data based on this patrons' knowledge and provide it for other patrons. Getting to know specifics of changes in reading i.e. Reading 2.0 might be a powerful tool to achieve this goal and further librarianship profession.

6. Conclusions

Reading 2.0 made out of interactivity and collaboration provides for possibilities that may further results of most of the parts of the reading process. The intimate experience of the text and its individual cogitation will always be part of the reading process as have been in the centuries known as the era of the codex. Changes in tehcnology and social innovations allow us to profit more from the reading procss and complement its traditional values in order to foster efficiency and productivity. This might as well mean the fostering of efficiency and productivity of intimate experience of the text and its' individual cogitation since these pahases of the reading process might never be as lone again as they seems to be in the past. In some contemporary interpretive communities today and in even more of them in the future Solitary reader will be always accompanied by its colleagues readers networked by possibilities of collaboration and interaction taht might be implemented easily and quickly and in suffcient numbers so that wisdom of readers may present itself as wisdom of crowds. One can always choose not to be the part of technologicaly and socialy provided possibilities and to remain trouth to the old ways of doing things. It is a choice each individual has to make on it own. But to make an informed choice ech individual needs to be aware of pissbilities and ups and downs they bear. Therefore further reasearching changes in reading is important for allowing us to make an informed decision on which concept of reading will we employ, when and to what efect. And of course to let us judge on opportunity costs for not employing the optimal concept of reading for a given reading task.

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RESEARCH PROCESSES AND RESEARCHER EDUCATION. HOW CAN ACADEMIC LIBRARIES CONTRIBUTE?

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Abstract

Most academic libraries today are involved in transformation processes, especially since digital archives and digital services for customers are continually prioritised. These libraries have also become research libraries as young researchers increasingly use the library facilities and employ the library itself as workplace to a greater extent than was previously the case. Librarians are also increasingly involved in research related activities.

I will explore the manner in which the three cycles of the Bologna process create a great need for research education at all three levels, i.e. postgraduate, graduate and undergraduate levels. I will partly focus on PhD students' situation. It is important that the academic libraries continue to improve the quality of access to and use of their collections in order for the educational benefits for young researchers to be optimised. Open Access is, among other things, of great importance in this context. This reorganisation must involve close cooperation between faculties, scientific communities and supervisors. I will include some examples of the restructuring that has taken place at the University of Bergen Library, Norway.

Keywords: Research; Students; Learning; University libraries; Librarians; Faculties

1. Academic research and research education

Today PhD candidates (the 3rd cycle in the Bologna process) are taught how to carry out research through postgraduate education and systematic teaching. Previously one often acquired research knowledge and competence by reading academic texts related to one's field of study, by participating in courses offered in methodology and writing, and by meeting one's academic supervisor in a particular academic discipline. Today, knowledge of research practice and ethics is also a main component in undergraduate and graduate courses (the first and second cycles). (Bologna 2009)

In modern doctoral education young researchers are to be taught three central skills (in all three cycles): scientific gathering of relevant knowledge, scientific use of relevant knowledge, and scientific presentation of the research process and the research results (cf. academic writing). (Dysthe et.al. 2000)

How is one to meet the needs of modern research education? Which actors are most suitable and in which arenas should this education take place? In my opinion, it would be more or less impossible to achieve an optimised research education in all three cycles without access to and use of an academic library in close cooperation with the librarians and the use of tools such as Open Access. In this connection I would like to emphasise five points that may contribute to the best possible research education in all three cycles:

1) The Faculty, the scientific communities and individual researchers must cooperate closely with the academic libraries and their staff
2) The Librarians must participate actively in research education through courses, by making archives/sources accessible and by providing different types of supervision
3) Specialised library and archive tools such as Open Access must be improved and further developed
4) The academic libraries must develop their digital offers such as computer hardware and software and electronic competence related to service, usage, updating and development
5) The academic libraries must become research libraries with customised physical facilities such as reading rooms, work spaces and cafés in which conversations and discussions of a social or academic nature may take place.

In this article the term research education has a fairly wide scope. It primarily refers to the structured research education at the doctoral level but also covers the more or less indirect nature of research education offered in undergraduate and graduate courses (the first and second cycles). At the first two levels the research education is not as formal and structured as at the doctoral level. The students at these two levels do, however, meet some of the challenges faced by PhD candidates as they attend introductory courses, access archives and sources, use library facilities and services and write term papers. The extent of the challenges faced by PhD candidates is, however, greater and the level is more advanced both with regard to formal education and the dissertation.

2. Collaboration between faculty, academic departments and libraries

If students are to benefit the most from the academic libraries' role and their function as guardians of knowledge, and to have the best possible access to the sources in their possession, it is imperative that information and knowledge about the libraries' role with regards to information for research be disseminated by both the Faculty administration, represented by the Department administration, and the Faculty Academic administration, represented by the academic staff and supervisors at the various departments, through teaching and supervision. The Faculty administration must organise information meetings and courses and must provide the opportunity to access the sources of knowledge deposited in and provided by the Academic Libraries. This practice must be institutionalised by allocating a certain number of hours to the teaching of Information Literacy, the teaching of which should be mentioned in the teaching plan. There is often competition with regard to the exact number of hours allocated to teaching. The teaching of Information Literacy (IL) should, however, be prioritised as the quality of research depends on it to a great extent. One of the most important tasks of the universities is precisely to carry out research – of the best possible quality. (Kulthaul 2004)

At the University of Bergen, library staff attends the orientation meetings at the beginning of each term, an arrangement which has proved most satisfactory. During the presentation students are provided with general knowledge about the academic library and the sources available. The meeting provides a platform from which further contact with the students can be developed. The Library also organises practical courses on how to access the sources available, for instance on how to navigate and search for information in databases, on how to find books in shelves and how to order books not openly available. In addition, the library also offers courses which teach for instance citation techniques, the use of sources and different reference systems and techniques. (Landoy & Repanovici 2008)

Courses related to research ethics and how one can and should avoid plagiarism of other people's research results and research presentations are also offered. Such arrangements must be planned in close cooperation with the Faculty administration and leadership so that these offers appear as compulsory units in the timetable and become a permanent part of the information dissemination logistics in all three cycles.

A greater challenge than that of the administrative responsibility related to ICT in cooperation with the Faculty libraries is the participation of the academic communities and individual teachers and supervisors. The knowledge and insight of the academic staff of the academic sources available in each library has traditionally been limited. The amount of time spent on Information Literacy in or in addition to ordinary teaching and supervision also varies considerably. Academic staff and supervisors also vary with regard to their motivation to disseminate knowledge and competence about Information Literacy. In the long run it would be a great advantage if the academic staff at the various faculties could cooperate systematically over a long period of time with the Library staff in matters related to research supervision and doctoral education (Torras & Sathre 2009). At the undergraduate level (1st cycle) a large number of Library staff can actively participate. At the postgraduate level (2nd cycle), and especially at the doctoral level (3rd cycle), only academic librarians should be consulted in each case (Akselberg 2009). Cooperation on access to and use of knowledge related to IL at the supervisory level is likely to become one of the major areas of development in the years to come as well as one of the major challenges as far as fields of study, administration and logistics are concerned.

3. PhD students, research and academic libraries

Particularly in relation to the PhD student it is important to have a close collaboration between academic departments and libraries. In Scandinavia, it conducted a study on PhD students' information management and library services. A presentation of the survey and its results are available in the report *PhD candidates and local research process: Bibliotekenes contributions* (2011). The study is conducted by the Bergen University College Library, Norwegian School of Economics Library, University of Bergen Library, University of Oslo Library and the University Library in Aalborg. The study was conducted as part of the project *Information Management for Knowledge Creation*. The results are obtained through literature review and focus group interviews.

The literature study shows differences in information behavior and literary preferences. Problems and research issues affect the practice most. The students give priority to digital resources available in relation to printed literature. Students do not have sufficient mastery in the handling, collection and assessment of information. Students expressed a strong desire for independent learning.

The interviews in the focus groups show that students see it as very important to contribute with original research. They have strong time pressure and expect effective methods to identify in the literature. They are particularly uncertain about the procedures for obtaining an overview of relevant disciplines in the literature. The supervisors feel the students' competence in the use of sources such as inadequate. Publication is perceived differently from being an essential part of career building to be a regular part of the learning process. A formal quality criterion to the impact factor does not seem to be essential. Studenets calls for support from the library in many areas, and sees this support as helpful guidance.

On this basis it is formulated requirements for libraries:

1) Awareness of the characteristics of education systems
2) Requirements for the understanding og literature as complex processes
3) Requirements for the understanding the cancidate’s development of identity and competence
4) Reqiurements for the understanding of the candidate’s development of strategies and assessments
5) Requirements for the understanding of interdiciplinary and dicipline differences
6) Requirements for the library’s reflection on identity and rolle
7) Claim to understand the ethical issues as an integral part of diciplines
8) Requirements for language and acceccibility

As a scientific professional, I welcome this study. Fhis is a very useful study. The results match well onmy own experiences as a supervisor and with feedback from my colleagues. There will be an advantage if the report is made available to all supervisors. The report should form the basis not only for the development of libraries supported this guidance and teaching modules, which is the main purpose of the report, but also for closer cooperation between libraries and academic environments.

4. Open Access and academic libaries

According to *The Berlin declaration for Open Access to Knowledge in the Sciences and Humanities* Open Access contributions must satisfy two conditions: 1) Free and irrevocable access to and further use of a work, in any digital medium, with proper attribution of authorship, and 2) the deposition of the work and all supplementary documents in a online repository using a recognized electronic format. (Berlin Declaration, 2003)

Open access can be seen as one example of a scholarly communication movement. It has been developed and championed by scholars for scholars to increase the impact of future scientific research and create a cost-effective publication system. Libraries also participate in this movement. The goal of Open Access is to enhance scientific knowledge work by making peer-reviewed research literature openly available on the Web with the creation of institutional preprint repositories or archives (sometimes called *The green route*) or by creation of online journals that are freely available to the end-user (called *The golden route*).

"The Open Access movement in scholarly communications poses new issues and concerns for education in general and information literacy education specifically. Open Access can affect the availability of new information, instructional materials, and scholarship in education." (Repanovici 2009:154)

Institutional repositories with Open Access (OA) have been developed nationally and internationally in recent years. At the University of Bergen, the library has been instrumental in developing and establishing *Bergen Open Research Archive* (BORA), which is a digital repository of research output from institutions in the Bergen area. BORA contains full-text peer-reviewed journal reprints, theses, dissertations, and other digital research materials.

Most libraries support the Open Access ideas and movement. In an academic setting, however, the library can not be the sole promoter of these ideas, but must work in close collaboration with the University leadership and scholars with a high degree of visibility and trustworthiness in the academic community. The library will be visible through being a service provider for scholars who want or are obliged to archive their material in the institutional repository.

The library can also be visible through the teaching for students and scholars when it comes to the finding and use of information resources for research, especially by promoting the institutional repository and other Open Access initiatives that can be reached from the library web page for resources.

5. Library facilities

If the academic library is to become more IL accessible to young researchers, practical steps must be taken and efficient technical equipment must be acquired. (Torras & Skagen 2007) Today practical measures are limited – as is the access to necessary technical software. Firstly, the physical space needed to access the IL sources available at or through the library is often under-dimensioned. Many libraries currently do not have enough physical space for these activities- mainly as they were not built to meet these requirements. When these libraries were planned and built, such tasks and services were not of great importance. Secondly, technical equipment is usually limited to some computers on premises. The number of computers on premises must increase in order for young

researchers to be able to efficiently carry out tasks related to their research. Larger physical space and access to more computers are therefore important.

In addition, the technical equipment – including hardware and software – must always be operative and must meet the technical standard needed to get the most out of the technical facilities. This implies that technical hardware and software must be updated and maintained on a regular basis. (Wessels 2010)

The cooperation between the IT-department and the library must be close, in order for the library's electronic resources to be available for users.

Most of the electronic library resources that are available for the students and young researchers will normally be presented through some kind of portal. In addition to making sure the resources, Open Access or subscriptions, are presented in an optimal manner, it is also important that the finding and using of these resources are shown and explained in the teachings from the library. This can happen as one-to-one explanations or more formalized courses for larger groups of students.

6. The library – Students research arena

Access to and use of knowledge for research through cooperation between the Faculty leadership, academic staff and academic library staff is crucial if we are to reach our goals of more, better and innovative research. In this perspective the libraries must become places where it is natural for students in all three cycles to search for and use knowledge. This includes the "Digital library" manifested in Institutional Repositories, and the "physical library". The students must have the opportunity to use the libraries as their natural workplace – in addition to lecture halls and the traditional reading rooms. In order for the libraries to appear user friendly to students with regard to ICT, which concerns much more than the ordering and gathering of academic literature, the physical surroundings (room organisation and solutions, workplaces, access to resources) must be appropriate and the distance to the academic communities must be short and practical. The students should also feel at home in the libraries as social spaces, canteen/café, toilets etc. are found on the premises.

In order to bring about these changes in the best possible manner, there must be close cooperation between the library, the Faculty administration and the academic staff. One must strive to establish a culture in which students gradually change their work habits and practices by being motivated to spend their time partly in traditional reading rooms and partly in specially designed work spaces in libraries equipped with effective and state-of-the-art technical facilities.

With the library as workplace, the effect of access to information through Open Access will be twofold. The students will have access to new cutting-edge research – in addition to being able to participate in research by publishing their own written work. Supervisors must encourage students to produce written work which- after having been examined by supervisors and fellow students- may be made available in Open Access. Text production must therefore become as natural as reading and text analysis for more students in the future.

7. Closer cooperation between the faculty and the library – Better research

The university is in charge of three central tasks: research, education and dissemination of information. The point of departure of these activities is research. A university whose research is weak and neither extensive nor innovative is likely to face great challenges. Research must be top priority, talented young students must be recruited and suitable research arenas must be developed at the universities. Structured research education and research groups at the doctoral level are a part of the answer to these challenges. The insight into research gained during the first and second cycles is equally important. Society at large will benefit from the fact that students have insight into

research processes and research practice in addition to their own practical experiences of research (c.f. McNeely et.al. 2008).

The increased focus on research education coincides with the digital revolution in academic libraries and an ever more extensive discussion on the responsibilities of their staff. This coincidence might be purely incidental. It is, however, advantageous. It is precisely the increased focus on the digital accessibility, organisation and operationalisation of the libraries and a discussion of the changing responsibilities of the academic librarians that may spur closer cooperation between libraries, faculties and scientific communities with regard to research education.

The libraries may consequently 1) contribute to the improvement of research, research education and the recruitment of researchers, 2) make valuable contributions to education and 3) increase the dissemination of information – in close cooperation with the faculties and the scientific communities.

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LIBRARIAN AND USER IN A DIGITAL ENVIRONMENT: WHAT HAS ACTUALLY NOT CHANGED?

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Abstract

The changes have affected the whole information universe, ranging from the very concept of the library, which is not just a physical place any more, to the nature of information, the way of its organization, storing and spreading, to the users who have turned from passive recipients into active participants and creators of different contents in the Web 2.0 environment. All these changes have also brought about discussions on the sense and future of the libraries. Have libraries become obsolete institutions that will only exist as monuments of culture, museums of culture, and are librarians inefficient and obsolete "browsers" in the situation when, owing to Google and other powerful Internet services, "anyone can be a librarian"? Are "Google generations" so much superior when it comes to information that any library service would become needless or seem boring and slow? On the basis of the above-mentioned questions and problematizing the deep-rooted non-critical stands on the concept and importance of information as such, this paper deals with the facts in intellectual, social and psychological sphere which remain permanent and unchanged despite all the technological novelties. The need for a warm, friendly and real environment, the necessity to apply graduality, individualization and adjustment to age as basic pedagogical principles are just some of them. The conclusion of the paper suggests the need for establishing a reasonable harmony between a brave innovation and traditional approach to organizing the library systems which also implies a work with the users.

Keywords: librarian in digital age, user in digital age, hybrid libraries

Introduction: What has changed?

Revolutionary changes, which brought along new information and communication technologies, shook up a cultural and civilisation era which rested on books and libraries. An instant access to information from any place and at any time has radically annulled the category of real time, space and physical objects which the world of libraries has been based on. A Copernican twist in the sphere of information marked the beginning of a new civilisation era, in with the Internet, as its main tool, represents its key determinant.

Current changes affect the whole information universe. Methods of supply, organisation, maintenance, distribution and use of information have been changed. Information environment is no long in the form of a hard copy – it has become digitised.

A single document is no longer a static and separate entity, e.g. a book or an article in a magazine. In the electronic form it may be several things at the same time, e.g. multimedia – a fusion of a sound, text and picture, animation, video clip, software application, and discussion in real time. Instead of a linear text, today we have a new information environment, hyperlinked and connected, which means that the very nature of information has changed as well.

New technologies have introduced new reading methods, which as a consequence had an increase in reading digitalised books using various electronic reading devices. The latest news state that the Amazon's Kindle bookstore, currently holding 810,000 titles, has in 2010 for the first time sold more electronic than printed editions - for every 100 printed book, 143 Kindle books were sold.[1]

An access to electronic contents has become the most favourable method of access to information for which libraries, most often, do not have the required infrastructure in terms of their efficient delivery. Consequently, the job of librarians, e.g. in the USA, has for the most part been taken over by NetFlix, Apple and other companies distributing electronic contents online – the contents which currently circulate in libraries, but only in a physical format, like books, magazines, CDs, DVDs... (Porter, 2010).

In the course of rapid changes, perhaps the most significant change has been the one introduced by Web 2.0 technologies. Web 1.0, which appeared in the nineties of the 20th century, was a one-way communication. Users could only read online contents initially uploaded mostly by institutions. The appearance of Web 2.0 represents a revolutionary phase in the development of the global network, in which communication and cooperation play key roles. Web 2.0 turned users from passive recipients into active participants in the information system. Scientific blogs, wiki pages, social networking services and connecting people, have for the first time in the history of human civilization created an environment used not only for a rapid and direct scientific exchange of information, but also for enabling every user become a potential critic and creator.

Despite the changes, new technologies have also caused an enormous production of information. Since the Gutenberg's invention, declared to be the most important invention in the last two thousands of years, the famous 42-line Bible with Psalters dating from 1455, in 2001 we have arrived to over a million issued titles worldwide. Production of scientific information has grown in line with more intensive specialisation in all fields of knowledge, and in the last decades the growth has been exponential.

Commercialisation of the Internet at the beginning of the last decade of the 20th century, its wide availability and the emergence of the World Wide Web marked the beginning of a new revolution. The number of web sites has increased from three million in July 1994 to over 188 million in January 2009. The trend of a meteoric growth continues, and the cyberspace continues to be populated with thousands of pages of different contents every minute. Experts estimate that, for the past 30 years, the total production of information has been larger than it has been in the last 5000 years. The latest estimates suggest that the humankind currently disposes with about 300 exabits (the number has 20 zeros!) of information filed both in a hard copy and a digital form.[2] The term "information crisis", which occurred in late 20th century, truly reflects the paradoxical property of the information universe in which the crisis was caused by information abundance. The most unalterable search engine for browsing through this chaotic universe proved to be mighty Google. Its use is widespread and unprecedented as evidenced by a new lexical unit - googling, which younger generations use as a synonym for the information finding procedure. According to the survey from 2006 conducted by the Online Computer Library Center – OCLC 89% of 3500 respondents said that their research starts with a search engine, 62 % of which use Google, and only 2% use a library site. [3]

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Listed dramatic changes have stirred many fears and an extensive debate about the existence and future of libraries. Are libraries obsolete institutions which will in the future exist as cultural monuments – museums of printed materials? Are libraries inefficient and outdated "browsers" in the situation when, due to Google and other powerful Internet services, "anyone can become a librarian"? Are "Google generations" that much superior in terms of IT that any librarian service will become redundant, inefficient and slow? ...

Answers to some questions, or "representation of interests" of libraries with statements that not all printed materials exist in a digital form and that it is likely they never will in the future, that the durability of digitalised copies is uncertain, and that existence of preserved old manuscript books dates back to almost 2000 years, seems insufficient because the spotlights are on the media or format, ultimately, technology itself. Even if traditional library services are entirely translated into online media, the technology shall only represent a mean or a communication channel in the information process on whose end points shall stand a library-information expert and the user. The destiny of libraries shall, thus, be eventually determined by a human factor of the information process.

A Prototype of the Modern User

A prototype of the contemporary but also future user in the universe of potential library users are considered to be generations of young people born in the age of the Internet and cell phones to whom digital world is a natural and the only familiar environment. These generations, born in the early nineties of the last century and onwards, were called digital natives by a writer and designer of software for learning, Marc Prensky. Unlike them, older generations - digital immigrants – have to cope with and adapt to the new and digital environment. The Internet is still a secondary source of information for them, and they acquire computer skills by reading instructions instead of learning how to use a computer. For them, real learning is still based on a linear text, and done individually, step by step. Digital natives, on the other hand, have a totally different mode of thinking compared to older generations, which is, according to Prensky, a logical consequence of conditions in which they grew up. Referring to studies of neurobiologists and specialists in children's mental health, Prensky goes even further, and concludes that the brain of a young person, influenced by a digital input, reorganises and literally changes physically. This phenomenon has been called neuroplasticity. A variety of sensations which rapidly alter in computer games, with which children and adolescents grow up, programme their brains for speed, interactivity and multi-functionality. Since this phenomenon has been observed in the context of a problem in education, Prensky concludes that schools and learning against an old model have simply been superseded, because teachers in those models, who are digital immigrants, speak in an outdated language from a pre-digital era and, more importantly, think in this obsolete analogue manner.

In addition to Prensky, many other authors believe that digital natives or Google generations (born after 1993, when the Internet came into the widespread use) are digitally the most superior generations. In terms of libraries, there is a concern that, for those information-wise most literate generations, libraries as institutions have simply become outdated. There is also a general belief that they are sovereign masters of the cyber space in which they easily find what they want.

However, a study conducted by a British library in 2008 *Information Behaviour of the Research of the Future*[4] presents findings, some of which are in conflict with generally accepted opinion. The study confirmed that young users are impatient in browsing information, that they select first results on a list of offered sources and that all other age groups are also characterised by a low level of

[4] British Library, JISC Study, (2008) Information Behaviour of the Researcher of the Future. Available://www.jisc.ac.uk/media/documents/programmes/reppres/ggworkpackageii.pdf (accessed 21/2/2011)

tolerance. Impatience and speed have become a standard in meeting information needs for both primary school pupils and university professors. Nevertheless, the most important findings relate to the younger population. It turned out that they barely know their information needs and that they have not developed a critical apparatus for assessing the validity and reliability of information, that they do not have a clear idea about what the Internet is about and that they think they can find everything there. Additionally, for them Google is the leading brand, they rarely use library web sites, superficially approach to a text and prefer short forms, particularly visual. However, the greatest surprise is a finding that information literacy in "digital natives" is not satisfactory, therefore, a pledge has been initiated for urgent information literacy at all levels in the UK.

All of the above stated shows that the use of information and communication technologies and an easy access to large quantities of information contain a great potential for education and advancement of both an individual and the community. At the same time, these data show us that it is necessary to meet specific conditions to use the potentials in a proper manner. Namely, there is no doubt that digital technologies provide opportunities for the improvement of cognitive skills, memorising and performing abilities, i.e. an ability to simultaneously perform multiple tasks. Furthermore, it is also indisputable that the process of learning, regardless whether in a real or virtual environment, is based on the universal principles of individualisation (knowing the needs and abilities of any individual), adaptability to an age (creating educational activities in accordance with abilities of a specific age) and a principle of a systematic and gradual approach (contents presented to the young should be in a specific order and interrelated, consequently, systematised).

In other words, a young user requires a specific order and a reliable guide in the chaos of electronic information. If he/she elementally enters the information universe and randomly selects the first offered document from the Internet scrapbook, which contains, without a visible order, important scientific contents, superb works of art, but also ephemeral, worthless and even harmful materials, then in such a case obtained data shall necessarily remain at the level of a lonely, non-contextualised fact. In order for a data to become information, it has to be presented with a meaning, i.e. contextualised and reflected about in the context. In other words, learning could happen easily and be really productive if the whole was conceived by understanding its parts and vice versa, if its parts were understood by conceiving the whole.

One of the answers to the key question "How to apply universal pedagogical principles, constructive psychological and social mechanisms of a digital environment in the educational system" is so called combined learning which represents a combination of electronic and traditional learning. The same operating model has been used by modern successful libraries and they have become a significant support and pillars of the new educational paradigm.

The Librarian in the Digital Environment

The famous Brophy's book *The Library in the 21st Century, 2000*, starts with a question "If the world is really built on information that transmits almost instantly from any one place to another, what role is left to libraries which, just yesterday, stood as the mausoleums of a printed word?". After comprehensive thinking about the topic, Brophy made a conclusion that libraries in the 21st century have a secure future if they manage to determine a reasonable combination of traditional services and bold innovations. In the second edition of the book (2007) he said that the scenarios of the judgement day have come and gone, and that the best libraries continue to renew and adapt to new circumstances. Those adjusted libraries are actually hybrid institutions which operate both as analogue, and digital and networked systems. They still make an important part in their communities as physical locations, among others, because even high-tech societies still have a need for a warm, friendly and realistic environment. Various users' needs, like educational, scientific, cultural, recreational, are still met in accordance with a type of a library, in a live and direct contact,

and in a traditional manner. At the same time, libraries have become active factors in the information society. They have joined the global network by producing contents which represent reliable and well-organised systems – on-line catalogues, own web sites, digitalised collections and electronic databases. Translation of information in an electronic impulse, which ensures wide availability, easy dissemination, updating and browsing has become an integral part of librarian activities which have been speeded up.

With Web 2.0 technologies, libraries obtained additional tools for meeting users' needs of the new age, which imply interaction, cooperation, networking, free access to information and permanent learning. Application of social networking services has started (Facebook, myspace..), as well as of services for the exchange, supply and aggregation of information (Delicious, FriendFeed..), video and audio transfer of information (Youtube, Wimeo..), archiving special collections, maps, photographies (Flickr..), e-learning platforms and microglobing software (Twitter, Plurk..), and instant messages and chat tools (Google talk, Yahoo Messenger, MSN...). All of these activities enable the use of librarian services in the building itself or from distance, using a user computer. What is more, this will be the first time in the history of the librarianship that the librarian is not only invisible for the end user; moreover, the user will not even be aware of their existence. By following links from Google or Yahoo, the user is most often not aware of the fact that they actually use a service of a library. Such is the case with the delivery of electronic contents to specialised workspaces like virtual learning environments and virtual research environments, where contributions of libraries simply remain invisible for the end user (Brophy, 2008).

Generally speaking, libraries provide great support to personalised educational online learning methods. These learning programmes include educational contents tailored to specific requirements of an individual or a group. Apart from exercises, tests and recordings of performance, animations, simulations, audio and video clips of discussion groups and online mentoring, they also contain texts and links to materials stored on the web, which are actually delivered by libraries. Although invisible for their user, librarians still in this manner perform their mission through their connection with human beings and their need for true knowledge, as they do it in the real environment.

In view of the above stated, being a mediator between the user and source information in a digital age, the librarian acquires new definitions. Thus, he has become an "agent" – as someone whose best interest is to find relevant information for users – or a "guide" who finds the right path through the labyrinths of unnecessary and redundant data. The librarian is also a "broker" who as an expert finds the best "product" for their client. Finally, with a few other definitions, there is also use of a term "aggregator" – human software which disposes with knowledge of other knowledge software. What all these definitions have in common is that all the roles have a task to turn information into knowledge tailored to human needs.

Conclusion

As seen from the above presented, changes affecting the information universe are holistic. Libraries are no longer merely physical buildings, separated by their walls from the outside world. They have become information hubs or "access interface to the global abundance of information" (Brophy, 2000) both in a hard copy or an electronic form, with which they grew out of their physical existence into the virtuality free of boundaries. New technologies turned libraries into public services available 24/7. Virtual visits to libraries, where users can browse through on-line catalogues, read different digitised documents, news and other contents, have reached fascinating figures. Virtual visitors do not only originate from distant parts of the country or world. Moreover, they live in the same place or in the vicinity of libraries.

Changes have also affected the concept of a Library Fund, i.e. collections of materials in the possession of libraries, processed, maintained and lent for use. The funds are no longer physical collections, but networked, connected and open resources. Enrichment of the funds and

improvement of their access has become extremely dynamic business which requires from librarians daily attention, effort and willingness for continuous learning.

Servicing methods and speed have changed. Accordingly, users' expectations have changed, but not their basic needs. Among potential users, the most demanding but, at the same time, the most vulnerable group are generations of young people, so called "digital natives". Easiness with which they surf through the information chaos has often proved to be an illusion. Their example shows there is a great need for a reliable guide in the age of excess information and that the right piece of information is only the one with a potential of becoming purpose-targeted knowledge. Libraries again proved to be the most reliable filters for this type of tasks and librarians the most competent knowledge organisers, providing at the same time free access to relevant contents and relief from unwanted ones.

"The history of progress in librarianship has always been a story about a successful integration of new technologies and means of communication into current programmes and services" (Vuckovic, 2010). This has been confirmed in the modern age. Libraries successfully continue to conduct the classic work of connecting users and information sources even in the digital environment. New technologies are integrated into a solid intellectual basis and methodology of organising and systemising knowledge of classic librarianship, and they have not become targets for themselves.

Although it seems paradoxal, but exactly modern technologies, which initially jeopardised the survival of libraries, convincingly demonstrated how significant and indispensable they are.

Finally, the question "What has changed in the library and information universe?" could be answer with - everything, except for objectives and the mission, and the question "What has not changed?" could be replied with – nothing, apart from technology. The same as a medium is not a determining factor in education, but a programme and methodology, the same formats and information carriers are not determining factors in the librarianship, but a manner and purpose of their organising and connecting. By paraphrasing famous Gorman's attitudes, we could say that even in the information society, knowledge and understanding rather than data or information are a central concern of librarians and the first reason for the existence of librarians is human provision of services to human beings and the community.

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INFORMATION MANAGEMENT FOR KNOWLEDGE CREATION, INFORMATION LITERACY FOR PHD STUDENTS

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Abstract: This article is dedicated to develop information literacy courses for PhD students. One survey was developed to doctoral school at Transilvania University of Brasov. It was focused on information literacy and needs of PhD students, current practices and strategies on: Finding resources for your literature review and beyond, "Copy right, not copycat" - Good academic practice when writing your thesis, Keeping your research up-to-date, Getting noticed: The databases that help you choose where to publish, Citation searching, Increasing your productivity by making the most of web 2.0 tools, Measuring and Improving your research impact with bibliometrics. It will be present survey results and recommendations.

Key words: information literacy, PhD candidates, citations, bibliometric, copyright.

1. INTRODUCTION

INFORMATION LITERACY IS "the adoption of appropriate information behaviour to identify, through whatever channel or medium, information well fitted to information needs, leading to wise and ethical use of information in society. [4]

In information society, researchers have at disposition new technologies and services that allow them to discover, locate, gain access to and create information resources on their desktops. However, there is evidence that research information skills have not kept the steps with rapid change in this area. This raises important questions about how researchers acquire the appropriate skills in information handling, and the take-up of the training opportunities provided. Information literacy concepts have to be harmonistic with this level of research. PhD students are next researchers and they need special skills to be successful in information explosion and information technology developing. The report *Mind the skills gap: Information-handling training for* researchers,[2] ends that training for researchers on information seeking and management is uncoordinated and generally not based on any systematic assessment of needs. The report focuses on the information-related training for researchers that is provided by universities and other higher education institutions. It looks at the roles that librarians and other specialists play and how the training that they provide it with the wider training provision.

Like example, Wageningen Graduate Schools from United States of America organised Information Literacy courses to PhD students and post-doc researchers of Wageningen UR and organised by the

Wageningen UR Library. It covers the following topics: Effective use of UR Digital Library, including My Library, bibliographic databases on different platforms, portals, electronic journals, etcetera, Getting to know the different types of scientific information sources: when to use what, How to select proper information sources for your research, Introduction to Citation Search and getting acquainted with Impact Factors of journals, Individual instruction and help in developing a balanced search plan, that will be beneficial throughout your PhD period.

"PhD students can be said to have the same, if not a greater, need to be information literate as any other university student. But there is one information related aspect that seems to be of a greater importance for PhD students: the ability to handle large amounts of research information is of particular importance for this group of students. Their studies are often taking place over a long period of time and they tend to penetrate their subjects thoroughly, hence they are subjected to and collect large amounts of information.

The majority of the students participating in the course indicated that it is very important to be able to organize and develop rational ways for easy and quick access to information." [1] Information management for knowledge creation, information management for PhD-candidates, is one project developed by University of Bergen, Norway in collaboration with Bergen University College, Norwegian School of Economics and Business Administration, University of Oslo Library, University of Aalborg Library- http://inma.b.uib.no/ .

The aim of the project is to develop information literacy education modules for PhD students. The modules will be tailored to this target group by taking into account their information searching behavior and information needs, as documented in the existing literature and as revealed by the project own findings. The modules will contain open access online resources and teaching portfolios for seminars within PhD programmed. The project will be run as collaboration between five Nordic academic libraries. [3]

2. CASE STUDY AT TRASILVANIA UNIVERSITY OF BRASOV

We surveyed doctoral school PhD candidates from Transilvania University of Brasov. Our data were collected in the first semester of 2010, during 2 weeks. We used one electronic survey, using this free tools site: https://www.surveymonkey.com. The survey was called: Information literacy for PhD candidates. We sent invitation to participate at this study on all their discussion list, The sample was validated from the point of view of women-men proportion and from the point of view of the respondents' proportion in distribution of year of doctoral school stage and distribution on PhD field research.

3. METHODS

Our survey contained two distinctive parts: information literacy and a scientometric elements part. The scientometric elements survey made use of a Likert scale. The Information literacy section consisted of 5 questions. Questions one through three were concerned with gathering demographic data. (See Anexes 1)

4. RESULTS

The most respondents, 78.8%, belong to engineering field, which is a traditional domain within Transilvania University, and the most active in the survey were the first year PhD students, 50.5%.

Regarding the difficulties in elaborating the PhD thesis, 59.1% of the PhD students encounter obstacles in the documentation process, and 53.8% in the process of communicating experimental results.

The main source of documentation is the scientific databases to which university has subscribed for 83.3% of the PhD students. The direct access journals are sources of documentation for 56.3% of the PhD students, and the university library represents the place where students get access to their resources for 46.9%.

Although they are the Google generation, only 24% access Google Scholar, Google Academic and only 26% institutional digital repositories. The PhD students possess a high level of knowledge concerning open access to information, 44.8%, and quotation, as a measure of scientific quality of articles, 37.9%. Their level is minimum in point of scientometric databases, 47.1%, of scientific production, 30.6%, and of institutional digital repositories, 31.4%.

They have acquired their high level of knowledge on these subjects as it follows: 79% by individual study, 54.7% by doctoral school courses and 50% by participation in conferences.

The PhD students' greatest interest lies in practices and strategies for informational resources research, 66.7%, which is followed by knowing the publications in which they should publish their research studies, 60.9%, and open access to information, 57.5%.

70% of the PhD students use References option from Microsoft Office 2007 for the management of the consulted documents and 35% RefWorks.

79% of the PhD students would like to have a presentation of these notions organized for them.

5. CONCLUSIONS

The period of research and writing PhD thesis is an edifying stage in the future researcher's development. During this period the PhD students must have research skills. The culture of information - which is necessary to any student through his/ her abilities to identify the need of information, to localize sources, to evaluate and use these sources efficiently, to use them in the process of learning and content creating and then to be able to generate knowledge - becomes impetuously necessary during the doctoral school.

The dissemination of the PhD students' research studies must be guided through presenting and acquiring knowledge of scientometrics, academic communication and critical evaluation of the obtained information.

A surprise element in the survey is the fact that a small percentage of PhD students use Google Scholar as a source of information. Google Scholar is a free scientometric base which comprises only documents that are academically indexed by Google. Every indexed document has the indexed

on Google Scholar quotations enclosed as well. Another surprise is the low level of knowledge regarding the scientometric databases, especially because the most PhD students use as main sources of information the databases to which university has subscribed, among which there are also the two scientometric databases, ISI Web of Science and Scopus. We think that the fact that they do not know the institutional digital repositories, free resources comprising scientific production of universities, is at their disadvantage and at the disadvantage of the scientific research community. The principles of open access to information, namely the *green way,* the institutional digital repositories should be promoted in order to change the researchers' mentality. The results of research studies do not achieve their mission if they are not displayed at the community's disposal by open access. The research surveys are financed through public money and consequently they have to reach the community.

The fact that the majority of the PhD students, who know these notions, know them due to their individual study imposes the organization of some presentation of the above mentioned notions. A module concerning courses related to these notions and practice applications will be proposed to the professor council of doctoral school.

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ANEXE 1

1. **In which domain are you subscribing with your application?**

	Response Percent	Response Count
Engineering	**78.8%**	**78**
Sports	5.1%	5
Economical science	6.1%	6
Medical science	5.1%	5
Philological sciences	5.1%	5

2. **Which year of doctoral school are you?**

	Response Percent	Response Count
I	**50.5%**	**50**
II	27.3%	27
III	22.2%	22

3. **Your gender.**

	Response Percent	Response Count
F	38.4%	38
M	**61.6%**	**61**

4. **Where have you difficulties in writing yours thesis?**

	Response Percent	Response Count
In documentation process	**59.1%**	**55**
Experimental research communications	53.8%	50

5. **Where do you prefer to search for informational resources?**

	Response Percent	Response Count
☐ At university library	46.9%	45
☐ Search in university subscribed data bases	**83.3%**	**80**
☐ On line catalogs of Romanian libraries	25.0%	24
☐ Online catalogs of libraries abroad	36.5%	35
☐ Google Scholar	24.0%	23
☐ Institutional repositories	26.0%	25
☐ Open access journals	56.3%	54

6. **Which is your knowledge level on a scale from 1 to 3, 1-minimum, 3-maximum you have about:**

	minimum	medium	maximum	Rating Average	Response Count
☐ Scientometric databases	**47.1% (41)**	42.5% (37)	10.3% (9)	1.63	87
☐ Scientific productivity	30.6% (26)	**58.8% (50)**	10.6% (9)	1.80	85
☐ Open access to information	10.3% (9)	**44.8% (39)**	**44.8% (39)**	2.34	87
☐ Institutional repositories	31.4% (27)	**55.8% (48)**	12.8% (11)	1.81	86
☐ Copyright issues	17.2% (15)	**46.0% (40)**	36.8% (32)	2.20	87
☐ Where to publish our research	19.5% (17)	**49.4% (43)**	31.0% (27)	2.11	87
☐ Citation, measure of quality articles	12.6% (11)	**49.4% (43)**	37.9% (33)	2.25	87
☐ Researchers, documents and authors impact	18.6% (16)	**55.8% (48)**	25.6% (22)	2.07	86
☐ Scientific research impact analyse	31.4% (27)	**50.0% (43)**	18.6% (16)	1.87	86
☐ Practice and strategies for searching scientific resources	16.3% (14)	**60.5% (52)**	23.3% (20)	2.07	86

7. **If you have a high level of knowledge please indicates your information resources.**

	Response Percent	Response Count
☐ Faculty courses	36.0%	31
☐ Master courses	22.1%	19
☐ Doctoral school courses	54.7%	47
☐ Conference presentations	50.0%	43
☐ Individual study	**79.1%**	**68**
☐ Discussions groups	19.8%	17

8. **Witch subjects have the high interest for you? (Please, indicate 5 subjects)**

	Response Percent	Response Count
☐ Scientometric databases	33.3%	29
☐ Scientific productivity	35.6%	31
☐ Open access to information	57.5%	50
☐ Institutional repositories	32.2%	28
☐ Copyright issues	23.0%	20
☐ Where to publish our research	60.9%	53
☐ Citation, quality measure of scientific article	48.3%	42
☐ Researcher, documents and authors impact	57.5%	50
☐ Scientific research impact analyse	40.2%	35
☐ Practice and strategies researching informational resourses	**66.7%**	**58**

9. **Do you use document management software for bibliography generating? If the answer is yes, please indicate witch soft.**

	Response Percent	Response Count
Reference Manager	10.0%	4
ProCite	2.5%	1
RefWorks	35.0%	14
Microsoft Office 2007- References	**70.0%**	**28**
Zoterro	0.0%	0

10. **Do you want to organise one presentation about these subjects?**

	Response Percent	Response Count
Yes	**79.3%**	**69**
No	20.7%	18

What we offer and what we expect from students on information literacy course?

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Abstract

Abstract: This paper aims to highlight the objectives pursued by the teaching faculty at the Valahia University of Targoviste and University of Bucharest who teach a course in information literacy, emphasizing the proposed approach type, the topic and its purposefulness browsing. Also, based on questionnaires completed by students from the two universities mentioned above, students who have graduated such a course, we try to obtain the feedback from them regarding their expectations after following such a course.

Keywords: information literacy, curriculum, higher education, user expectations

Introduction

Due to the diversification of information technologies, to the speed with which are produced changes in the Internet search tools and to the plurality of ways to access information, the specific users in higher education are faced with a growing production of information. To cope with current challenges, they must have certain specific skills that require training in the information literacy, so that, according to one of the many definitions given to this concept, to be able "to identify, through whatever channel or medium, information well fitted to information needs, leading to wise and ethical use of information in society. "[1]

In this context, university libraries have a crucial role in forming an information culture to their users so they have to be able to know the library offer, to be familiar with its services, to learn how to access information, to know how to use various sources of information. To identify students' expectations as regards the approach of an information literacy course, we have initiated a research among them, based on questionnaires. These were distributed to a sample of 69 students from two universities: Valahia University of Targoviste and University of Bucharest. The aim of our study was to assess the effectiveness of inclusion information literacy skills throughout the course. This research provides a basis for further investigations into the aspects of service which students consider being important in their overall experience, and the changes that libraries must need to make to meet expectations of its users.

Importance of information literacy skills for students

It is known that a success in terms of knowledge and use of library services depends on information literacy skills of its users regarding a number of specific elements of intellectual work. Most of the times library users don't have adequate knowledge on library resources and how to use them effectively and efficiently. So they must have knowledge about not just the technology, but the domain of the application and the skills needed to determine what they need and how they use. In these circumstances, the university by its library must shift from purchasing important resources according the user requirements to one of being an effective service provider in promoting and encouraging users to utilize the resources in effective manner.

In our paper we focused on faculty type of approach who teach a course on information literacy at the two universities and what expectations they have from their students after graduation. Also in the opposite direction were also assessed students expectations on this kind of course. The university library, playing a major role in this activity, by its staff will provide knowledge on traditional and electronic resources which are particularly needed for teaching, learning and research activities of the university.[2] These training sessions include the support for users on how to use the major traditional and electronic resources available in the library including WWW resources and other relevant topics such as on-line databases, information searching, retrieving and analyzing. Of course, all in full agreement with the teacher who taught such a discipline.

In terms of practical application of concepts and methods taught in the class, in the library is a person empowered to assist the users when they need: assistance for accessing, downloading and saving electronic information and supports the user to obtain the maximum benefits of information literacy skills programs.

Teaching faculty expectations

Talking about what kind of skills must provide an information literacy course for our students the most specialists said: *critical thinking skills, problem solving, decision making.* All three of these phrases refer to cognitive skills that are necessary to create new knowledge and to learn how to learn. The ability to learn how to learn is a key characteristic of those who are information literate: *"know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them."* [3]

But teachers cannot prepare their students to be information literate unless they themselves understand how to find and use information because they are to use information so that others can learn from them. The information-literate teacher will also be able to select and use resources most appropriate to multiple intelligences and learning styles. [4]

When teachers were asked about what they expect from their students who will graduate an information literacy class, they responded that expect them to be able to [5]:

- Identify their information needs;
- Plan research strategies based on the research question;
- Know and locate all kind of library resources, not only print one but also electronic ones;
- Select the most adequate resources for their research needs;
- Distingue among library catalogs, on line databases and World Wide Web: to make the difference between an academic database and a search engine;
- How to search for information using a variety of strategies;
- To locate and access information through by developing appropriate search techniques and using information and communication technologies: use multiple keywords or descriptors to make more efficient their searching;
- Compare and evaluate the obtained information from different sources;
- To use and communicate information properly by citing references in research papers, by building a coherent and standardized bibliographic system, by respect towards the law relating to copyright;
- To synthesize, based on accumulated knowledge, a paper that adds value to the field under study.

Restricting to just a few ideas exposed above we can say that professors are especially interested in students' understanding of information literacy, about the importance that them place on these skills and about what role do they think the library should play in helping them develop information literacy skills.

Student expectations

At present students expectations studies have become one of the most interesting ones in the area of service quality in many academic disciplines, being used to determine their relevance in the context of knowledge society. They face a daily explosion of information resources and the challenge of using these resources effectively and responsibly. [6]

In this context, we try to find out, based on a research study, the student perceptions and expectation regarding information literacy programs in two Romanian universities: Valahia University of Targoviste and University of Bucharest. In this case the student learning objectives that we have noticed was:

- Recognize information need.
- Gather relevant information on a specific topic.
- Distinguish different kinds of sources: primary and secondary; traditionally and electronically.
- Be able to develop a strategy for locating information that takes into consideration the different terminologies and organization of access tools such as databases, Internet resources, and print materials.
- Verify the authenticity and accuracy of the information
- Be able to develop and refine a research question in relation to the sources.
- Be able to select, organize, utilize and analyze the most valuable sources collected and draw conclusions from them.
- Be able to understand the citation, URL or other bibliographic representation for information sources, which then guides to physical access and evaluation of information sources.
- Be able to construct a research paper in concordance with the selected sources, demonstrating that they can properly paraphrase text and avoid plagiarism.

After following such a course, students realized that they have the opportunity to practice what they learned in instructional sessions and augment their information literacy skills. For example, students will be able to search in an on line database to find a scholarly article related to their research paper topic. On the other hand, they will demonstrate that they can reaffirm in their own words the main ideas in a scholarly text, and quote text appropriately.

The collaboration between professors and librarians for integration of information literacy course into curriculum

Education for information culture is a responsibility of all libraries. It is necessary a strategic approach of it and, also, a collaboration between the structures infodocumentary experts and ones from the area of education, technology and other disciplines, to develop programs to promote information culture. It should be seen as an ongoing process that requires interaction of all involved parts.

The role of the university libraries is to bring knowledge to students and faculty by providing access to scholarly resources and offering services that help students and faculty find, evaluate, and use these resources. The library must support these kinds of classes in which the students learn finding and evaluation skills that help them complete an assignment. This ability to construct meaning is the most important feature of information literacy, which describes the skills which students need to cope in a very complex world when information is more and more numerous.

The class visits are based on students' needs and continue based on personal relationships that have developed between teaching faculty and librarians, which believed that this relationship could be strengthened and services to students improved. Professors with experience in collaborative planning and teaching have to see the role of the librarian more positively and welcome continued collaboration because the results of the collaboration are more powerful and significant than the

results of their individual efforts. On the other hand the librarians understand that if they wish the library to function more effectively they must direct their efforts toward the curriculum, working together with the faculty.

The librarian support includes working directly with teachers to develop their understanding of the role of the university library. This is accomplished through a good collaboration between the two parts, presenting library activities in mutual meetings, stating expectations of teachers regarding library, and serving as a model by effectively using the library and its information literacy program. Librarians address these needs by teaching workshops and open seminars for faculty using the facilities offered by the Internet and using more and more on line databases in their research activity. In their turn professors are beginning to restructure their courses and teaching methods by using networking facilities and start to cooperate with librarians in developing their curricula.

Successful collaboration involves changing both the attitudes toward and expectations of the role of the librarian in integrating information literacy into curriculum. Recent research shows that most students and teachers don't perceive librarians as integral to their own success. It is up to the librarian to take steps to change this by serving on curriculum committees, attending planning meetings, and sharing ideas for integrating the information literacy into the curriculum. [7]

On the other hand, teachers need help to make the transition from independent teaching to collaboration. The librarian can help facilitate this change by acting as the change agent, innovator, opinion leader and/or monitor. The most appreciated qualities of a librarian mentioned in specialists discussions are communication skills, initiative, leadership qualities, confidence and willingness to take risks.

Questionnaires' interpretation

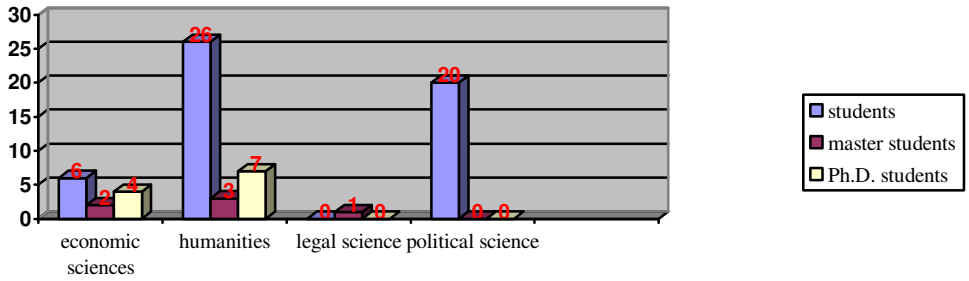
Extensive efforts are been made by Valahia University of Targoviste and University of Bucharest to measure user expectations and satisfaction and reactions to user services in a continuous effort to improve the values of their organizations in rising their service quality. Thus, the outcomes of the research will become a reference tool for library administrators and specifically the policy makers in the higher education sector, allowing them to make decisions to raise the quality of the information literacy development programs to strengthen the knowledge of the wider user community.[8]

The structured questions in the questionnaire mainly consisted of 28 questions in relation to the quality of the consulted on line data bases. Each scale was scored using seven point Likert Scale ranging from 1 (total disagree) to 7 (total agreement). Data was collected form 69 individuals: 52 students, 6 master students, 11 Ph. D. students. The determinants for evaluating quality of on line data bases were selected based on the opinions of three professionals in the field of librarianship, being developed by members participating in the project "Evaluation of the quality and performance of online libraries." Its specific objectives were the development of the methodological framework for assessing the quality and performance of online libraries; developing and improving their assessment systems; supporting and improving the performance management libraries online.

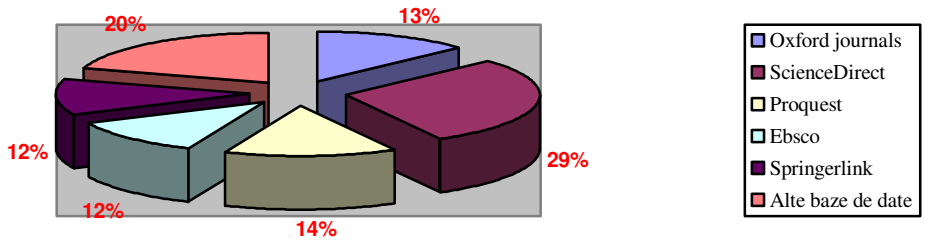
Among the data that the questionnaire attempt to obtain were

- Accessibility of necessary information to achieve a specific task
- Relevance of information provided by the library online
- Clarity and unity of the information provided by the library online
- Completeness of information provided by the library online
- Presentation of the library's online interface in terms of usability and performance
- Utility of services provided by the library online
- The degree of contentment and satisfaction concerning the results obtained by using the online library
- Intention to use such information resources in the future

The questionnaire was designed so that by completion can be identified different profiles of respondents, a fact illustrated below:

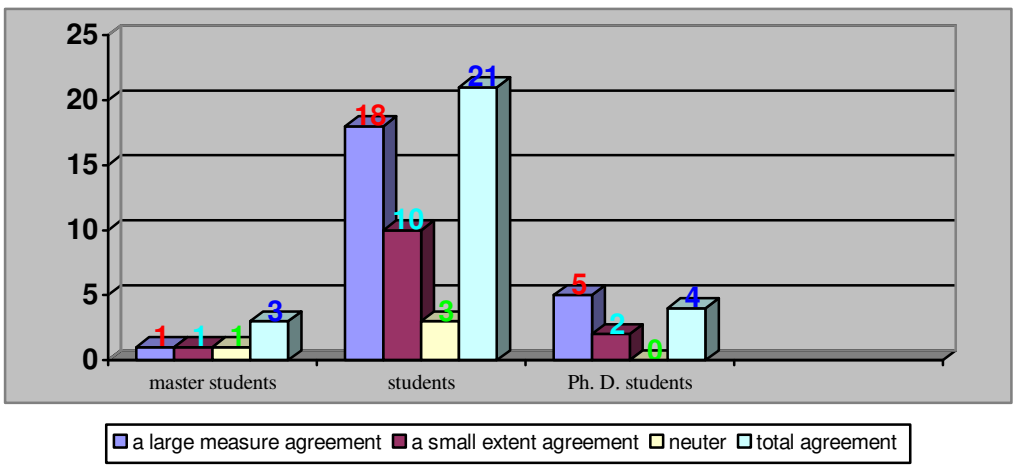


Regarding the types of databases consulted the situation is as follows:

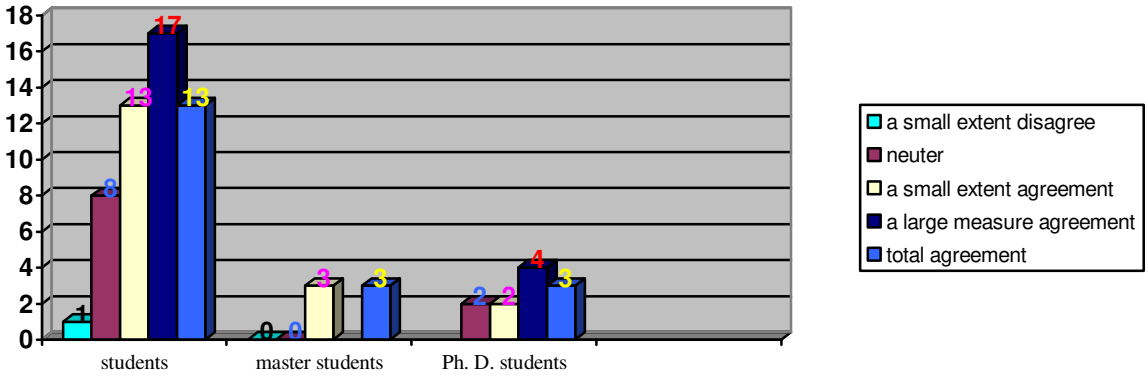


It is seen that the Science Direct database has gathered the most support from those asked who considered it an easily accessible database that meets their diverse research needs. Among Ph. D. students and Master students, Oxford Journals database was reckoned to be much closer to their demands.

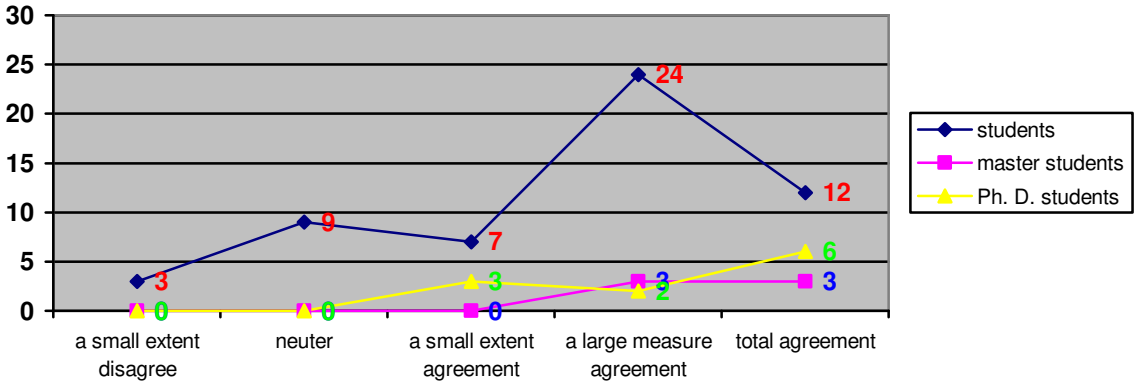
Regarding the availability of specific information needed to carry out scientific studies, respondents belonging to all three educational levels, have been totally agree with this feature of online databases, noting that the searched information was readily retrievable.



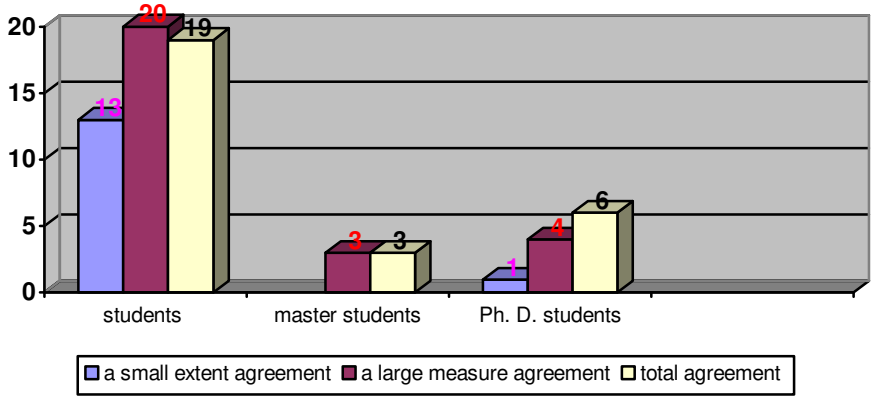
In terms of relevance of information provided by the databases most respondents agreed with this, which means that their assessment of this point of view is positive. Should be noted that the relevance depends on the database consulted and the level of the respondents.



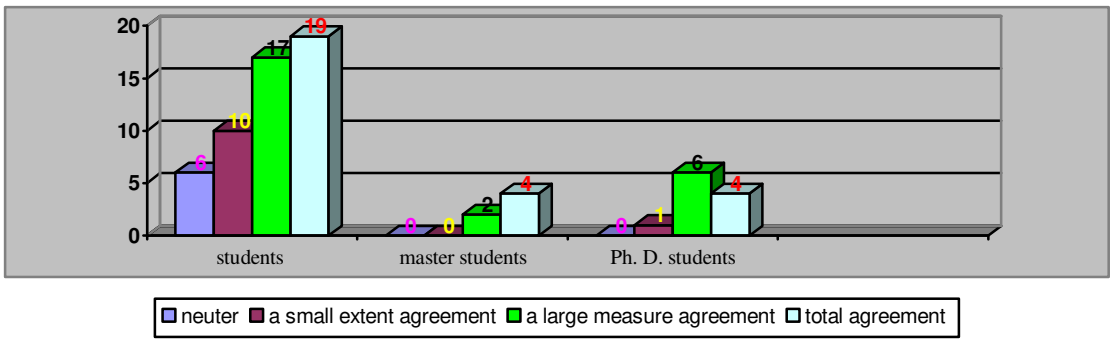
Clarity and unity of the information provided by online databases was assessed in a positive way by all respondents which mean that the information is presented consistently and clearly.



The degree of contentment and satisfaction with the results obtained by using online databases is positive, which demonstrates their usefulness in the educational process and research.



In close connection with the degree of satisfaction is the question about the intention to use in future such information resources, the answer in this case being one satisfactory, showing an increasingly openness to these new types of information, presented electronically.



The conclusions were formed on the main research question, which pursued to test a model for evaluating online databases, leading to the involvement of officials dealing with library and information science into a complex profitable operation of these types of information sources utility.

Thus, respondents from all three educational levels, have appreciated the relevance, usefulness, convenience, accessibility of online databases, intending in the future to use them in research or learning.

Conclusion

In conclusion, information literacy is now one of the most essential skills in our universities and it implies three very important linked steps:

- Becoming aware of your own information needs.
- Being able to perform efficient information retrieval.
- Being able to evaluate and use the results obtained.

There is evidence in information behaviour research, as well as the authors' own research, which can help understand the nature of information, and information literacy, within different disciplines. Making use of the research evidence may also be useful in opening up a dialogue with academics and stimulating them to reflect on their own practice. An increasingly stressful and demanding academic environment can encourage an "us and them" culture of blame or indifference, rather than empathy. However, empathy and dialogue seem a necessary component in achieving effective partnerships for information literacy education.[9]

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Tools for lifelong learning using information literacy

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Dunarea de Jos University of Galati

Abstract

Abstract: The aim of the investigation is to develop useful tools for the lifelong learning, using the information literacy. The paper focuses on the state of the art related to the concept definitions, the evolution of the information literacy, standards and rules - applied in the information literacy - useful for anyone interested in being an information literate person. One of the goals of this paper is to describe some models available in the information literacy teaching, as adequate solutions of the research tasks, processes or questions. Due to their simplicity, the models easily reveal the right steps in teaching and learning information literacy. The models presented have been developed as workflows in research processing. Also, useful resources, which include more models connected to information literacy, are presented in this study.
As a general conclusion, the information literacy can be defined as a concept related to the literacies that continuously improve due to the change and needs of the information society. That is why the researchers always seek for new methods, strategies and teaching skills in order to design new models according to the information environment progress. In the knowledge society, it became a necessity for all of us to be continually informed about the information literacy politics, best models adapted to the society needs, as requirements for better understanding and successful implementation of the research process.

Keywords: information literacy models; research process; lifelong learning

1. History of the information literacy concept

The information literacy, as an art of teaching in using information, has evolved as the information environment changed over time. According to the definition, given by American Library Association (ALA) in 1989, the abilities *in recognizing the need for information, locating, evaluating and using information* are essential tools in any research process. Some fundamental concerns on information literacy have revealed in time[10]:

- 1974 - Paul Zurkowski defined the techniques and tools for the research issues solving;
- 1986 - Hashim reported that „to learn to identify the needed information, to locate and organize it" is an imperative requirement for students;
- 1986 - Mancall, Aaron & Walker have introduced the concepts of *thinking skill*s, *process information and ideas* and *the development of information skills*;
- 1987 - Kuhlthau included in her contribution *Information Skills for an Information Society: A Review of Research* the ideas of documentary skills and computer literacy and the implementation of the information literacy within curricula.
- 1988 - American Association of School Librarians (AASL), a division of ALA, published a national guideline named *Information Power: Guidelines for School Library Media Programs*, an useful instrument for students and academic staff;

- 1989 - ALA has set an accurate definition about understanding the subject or topic, selecting the appropriate terminology, formulating the strategy, analyzing the collected data and turning the information into the knowledge [3];
- 1992 - Doyle has defined the information literacy as ability of obtaining, evaluating and using the information by consulting various information sources;
- 1996 - Jeremy Saphiro & Shelley Hughes have described the information literacy as *art of working with computer, accessing the information and reflecting critically about it*;
- 1998 - AASL & Association for Educational Communications and Technology (AECT) developed in the article *Information Power: Building Partnership for Learning* nine standards grouped in three categories: information literacy, independent learning and social responsibility;
- 2003 – In the framework of the International Conference from Prague, supported by National Forum on Information Literacy, UNESCO & National Commission on Libraries and Information Science, the information literacy was assigned *part of the basic human right of lifelong learning*.

2. Approaches on the information literacy standards

Different investigations were developed in order to settle the all problems related to a research topic. To improve the abilities of the students in using information, known also as *information literate*, some guidelines were drawn up for a better understanding of the information literacy concept.

The standards, named *Information Literacy Standards for Student Learning,* by AASL in1998, have been grouped into three categories which are detailed below [1]:

1. **information literacy standards:**
   - to access efficiently and effectively the information;
   - to evaluate critically and competently the information;
   - to use accurately and creatively the information;
2. **independent learning standards:**
   - to seek for information related to personal interests;
   - to evaluate literature and create valuable works;
   - to make efforts for seeking excellent information.
3. **social responsibility:**
   - to recognize the crucial importance of the information for the progress of the knowledge society;
   - to have an ethical behaviour related to the information and information technology;
   - to cooperate for an effective seeking and information dissemination.

In 2000 ALA has defined five standards, performance indicators and outcomes in *Information Literacy Competency Standards for Higher Education* presented as it follows [2]:

- to recognize the need of information;
- to access effectively and efficiently the information;
- to evaluate critically the information selected and to include it into the background knowledge;
- to use effectively the information in order to accomplish the goals;

- to use and access legally and ethically the information.

In 2006, the International Federation of Library Associations (IFLA) proposed three basic directions in *Guidelines on Information Literacy for Lifelong Learning* useful for an information literate person [13]:

- access to information:
  - get the definition of the information;
  - locate the information;
- assessment of information:
  - extract, interpret, select and evaluate the retrieved information;
  - organize into categories the best and useful information;
- sharing of information:
  - new ways to disseminate and present the product;
  - acknowledge.

In 2008, the American Association for School Libraries (AASL) has adopted standards for the 21st Century Learner including the following skills [18]:

- inquire, think critically and gain new knowledge;
- conclude, decide, create new situations and knowledge;
- disseminate knowledge and be involved ethically and productively for the society evolution;
- strive for personal knowledge improvement.

3. Theories regarding the information literacy

There are two theories related to the information literacy and the areas connected to it.

1. The information literacy, as part of the information science, is connected to fields such as [15]:

- information psychology – describes how to seek, acquire, organize, process, use and store the information;
- information sociology – manages how to create, produce, organize, disseminate, use, preserve and discard the information;
- information management – shows how to create and organize the information;
- information engineering – means how to design information systems (databases, library collections) to satisfy the needs of the customers.

2. The holistic approach of the information literacy suggested the following components [12]:

- tool literacy – tools of the information technology relevant to education and training;
- resource literacy – form, format, location and access methods of information sources;
- social-structural literacy – how the information is socially situated and produced;
- research literacy – IT tools relevant to research or students' work;
- publishing literacy – publication of the ideas in electronic formats;
- emerging technology literacy – innovating tools and research methods in the information;
- critical literacy – critical evaluation of strengths and weaknesses, opportunities and threats, of the information technologies.

4. Information literacy models

It is undisputed that a powerful knowledge in the information literacy area is the key of finding solutions for the research issues. Based on the analysis of the abilities mentioned above, many models of information literacy were developed last years.

4.1. Theoretical models of information literacy

Taking account of the research phase, in the literacy there are models grouped as it follows [9]:

- information search and use models;
- information inquiry models;
- models for a specific field.

Some of these models are briefly described in the next section of the research.

5 A's Model: Asking → Accessing → Analysing → Applying → Assessing
The model was created by Ian Jukes in 1998 and is applied for searching and using the information. More details at: http://www.virtualinquiry.com/inquiry/as.htm

8 W's Model: Watching → Wondering → Webbing → Wiggling → Weaving → Wrapping → Waving → Wishing [9]
An information inquiry model, created by Annette Lamb in 1990, explores the investigation process. More information at: http://www.virtualinquiry.com/inquiry/ws.htm

The Big 6 Model: Task definition → Information searching → Information locating and accessing → Information using → Synthesis → Evaluation [4]
An other information search and use model, created by Michael B. Eisenberg and Robert E. Berkowitz in 2000, represents the most popular model which answers to the research problems. More details at: http://big6.com/

DIALOGUE Model: Define → Initiate → Assess → Locate → Organize → Guide → Use → Evaluate [9]
The model was developed in 1998 and illustrates the activities whose initials spell DIALOGUE word. More information at: http://www.virtualinquiry.com/inquiry/dialogue.htm

Research Cycle Model: Questioning → Planning → Gathering → Sorting & Sifting (Selecting) → Synthesizing → Evaluating → Reporting (the cycle is repeated for several times) [11]
An information inquiry model, developed by Jamie McKenzie in 1995, recommends to focus on the research questions, following cyclically the steps of the research process. More information at: http://www.fno.org/dec99/rcycle.html

The Alberta Model: Planning → Retrieving → Processing → Sharing → Evaluation [6]
The model belongs Alberta Education and it was presented in the article *Focus on Research*. (1985). More information at: http://www.ifla.org/IV/ifla65/papers/078-119e.htm

Kuhlthau's Model: Task initiation → Topic selection → Pre-focus exploration → Focus formulation → Information collection → Search closure [7]
Developed by Carol Kuhlthau in 1993, the model presents the stages of the information process. More information at: http://library.humboldt.edu/ic/general_competency/kuhlthau.html

Seven Pillars Model: Recognize information need → Distinguish ways of addressing gap → Construct strategies for locating → Locate and access → Compare and evaluate → Organise, apply and communicate → Synthesise and create [17], [8]
A practical model, designed by Society of College National and University Libraries (SCONUL) in 1999 for higher education, combines the information literacy and IT skills with the idea of higher education development.
More information at: http://www.sconul.ac.uk/groups/information_literacy/sp/papers/Seven_pillars.html

Research steps to success Model: Preparing/Exploring → Accessing/Investigating → Processing → Transferring/Creating [16]
Provided by Sandra Hughes, the model is designed like students are climbing steps to find answers to their research. More information at:
http://www3.sympatico.ca/sandra.hughes/sandra.hughes/research/researchs.html

Much more models can be found visiting the following websites:
http://www.virtualinquiry.com/inquiry/models.htm
http://www.shambles.net/pages/learning/infolit/infolitmod/
http://ictnz.com/infolitmodels.htm

A comparative analysis of these models can be retrieved at the following website addresses:
http://www.ils.unc.edu/daniel/242/InfoSkillsComp.html
http://www.virtualinquiry.com/inquiry/bakermodel.pdf

4.2. Practical models of information literacy

Teachers as well as librarians must have a deep understanding of the phenomenon of information literacy in order to provide the right tools to the students. In this way, the students gain new skills and upgrade their knowledge.

The information literacy provides amazing tutorials which play the role of instructional guidelines in the research process. Some tutorials - including details about the title, author, website hosted and main activities - are briefly presented in the next paragraphs.

Information Literacy Tutorials: represents a series of video tutorials and are available at: http://www.youtube.com

As Bob Baker reported, *this series of tutorials is to help students become more knowledgeable information consumers* [5]. Figure 1 illustrates, in an attractive manner, the aim of tutorials or, in other words, how the students should write a good research paper. To develop a well-written paper, they have to take into account all phases detailed in the figure 1.

Research Process: represents a step-by-step tutorial exposed by the Oregon School Library Information System at http://www.oslis.org/front-page. The website is an excellent portal for accessing high quality information within an information literacy framework organized at the elementary or secondary students or educators levels.

Figure 2 describes the research process phases such as: define, plan, research, create, present and reflect on the investigation topic. They are useful tools for learning to research, finding the information, citing the resources, disseminating the investigation results [14].

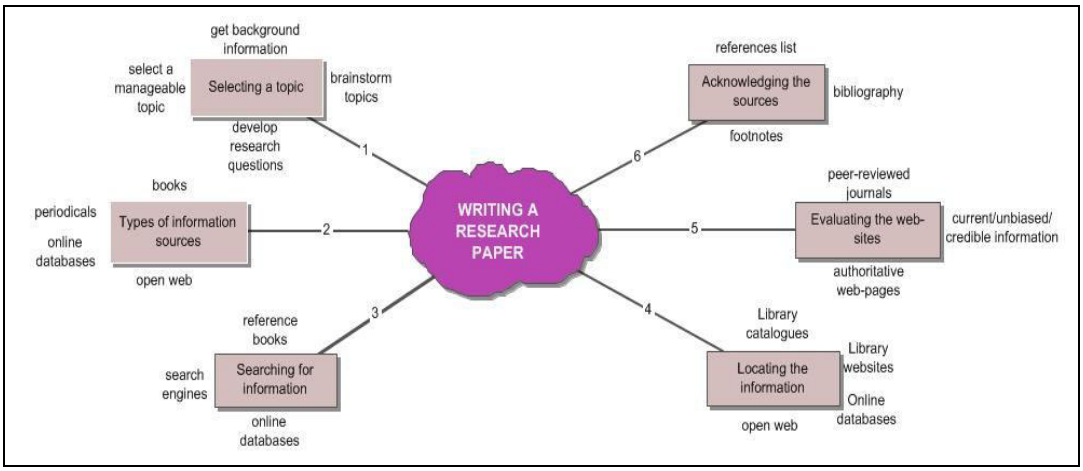

Fig.1. How to write a research paper

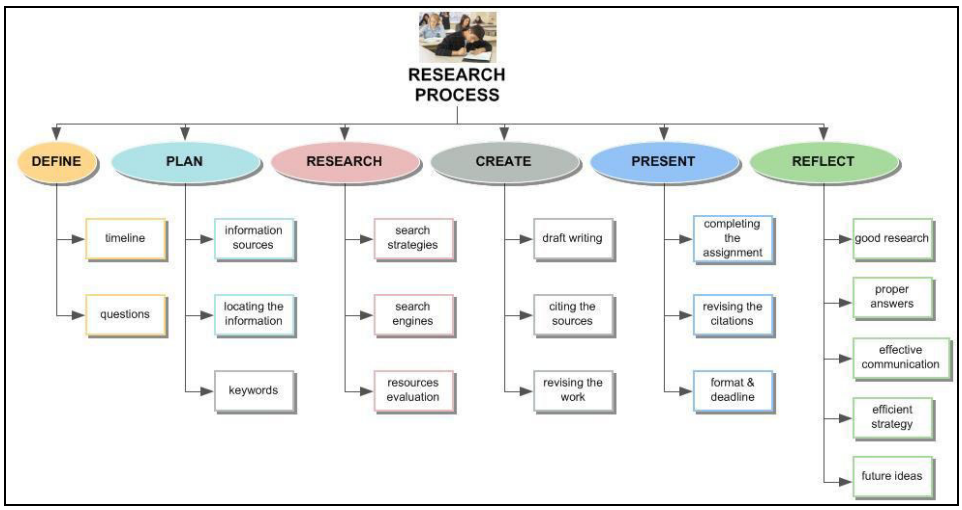

Fig.2. Learn to research

Research and information skills tutorial is available at http://www.library.usyd.edu.au/skills/

The website hosts programs and services, designed by librarians, which are useful for guiding students in their studies or research. Figure 3 shows all stages of the research plan starting with getting information for an assignment until writing it. The intermediate phases cover the research planning, searching, locating, evaluation and citing activities. These learning tools are designed as podcasts, interactive tools or videos instructions [20].

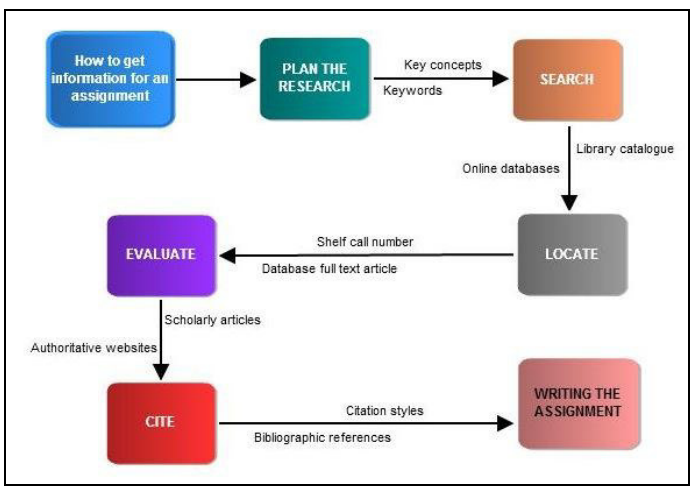

Fig.3. How to get the best information for writing an assignment

Discover Information Literacy tutorial is a video presentation which is available at http://www.youtube.com

The tutorial is provided by University of Mary Washington (2007) and it was named DISCOVER, after the initials of the research process activities. The tutorial includes the description of the aspects regarding the defining, inquiring, searching, collecting, organizing, verifying, expressing and reflecting stages of the investigation. This useful instrument defines and guides students and teachers through the information literacy concept. It is a well organized and friendly video tutorial, which offers a demo version related to a research topic development. It addresses people who would be interested in learning experience improvement [19].

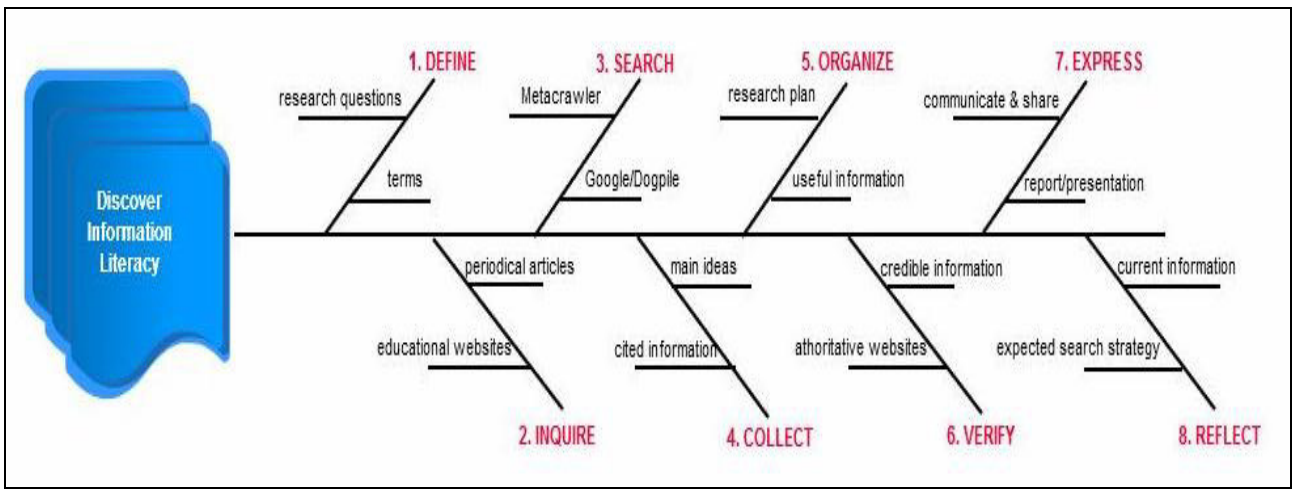

Fig.4. How to DISCOVER Information Literacy

Dunarea de Jos University Library of Galati is evaluating its website which will also include an implementation model of the information literacy as a collection of **how to** tutorials. The model proposed is presented in figure 5 and consists of defining, investigation, developing and dissemination of the information. This model can be applied for the academic purposes such as investigations or results presentations. The proposed tutorials describe the objectives, activities and patterns for a better understanding of the right and good research process.

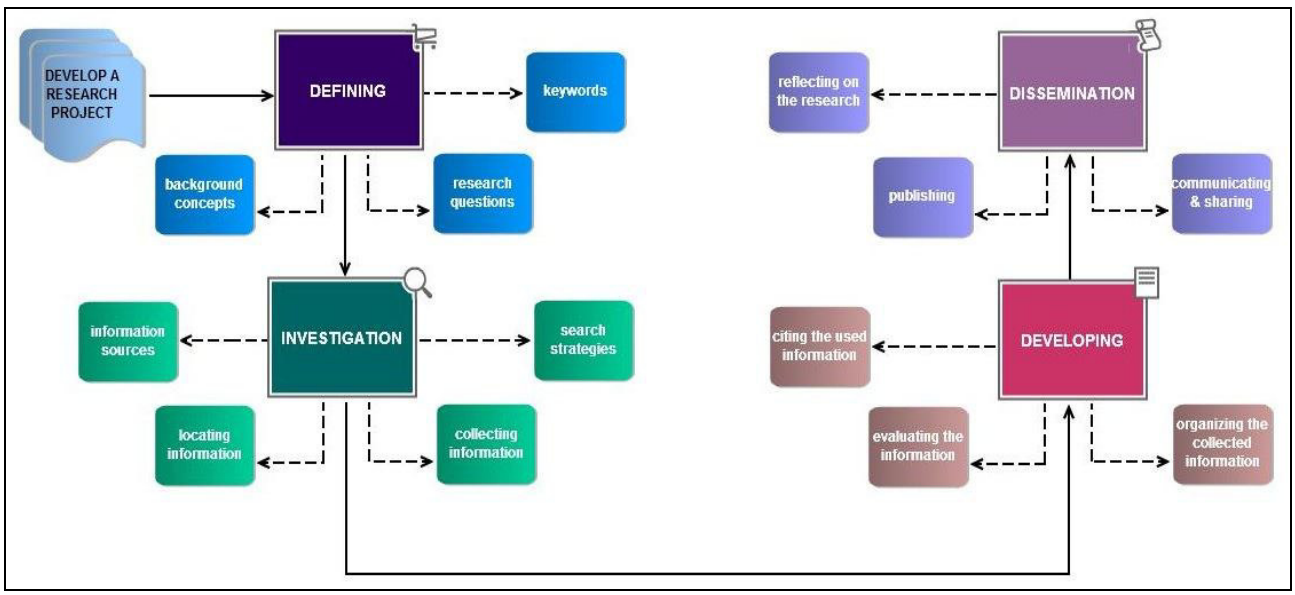

Fig.5. Model proposed by *Dunarea de Jos* University Library of Galati

5. Conclusions

- ✓ the models presented in this paper represent useful guidelines for people who are interested to identify the appropriate design of the research process;
- ✓ the models provide authoritative solutions retrieved from the educational websites or developed by the information literacy specialists;
- ✓ some models reveal practical examples, even online tests that should increase significantly the people's understanding about the information literacy concept;
- ✓ a comparative analysis of different information literacy models proves that whatever is the title of the model, the activities are the same in any investigation;
- ✓ these models should be adopted, adapted and improved according to the specificity of the institutional environment.

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Information Literacy and Old Romanian Culture II

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Abstract: Middle Age Man has developed over time to assess the skills of informational books, dominant views of the importance of consecrating their assessment to support the Orthodox faith. Particular aspect is the introduction of the Romanian language in worship, through books written directly in the national language and translation (up to year 1800). Begun under the impulse of the Counter Reformation and religious, the introduction of Romanian Orthodox church in worship was made possible by political and religious programs undertaken by the two fundamental institutions of the Romanian, the Lord Church. By the middle of the eighteenth century, the Slavonic language was replaced in worship, and has since started another stage of culture, the modernization and expansion of the cultural horizon. A manifestation of modernization was translated books in the languages of the era in Romanian culture. In this process, the translators have demonstrated skills now called „assessment information. Many scholars, connoisseurs of refined subtleties of theological language and production of the book were able to do bibliografierea and critical editions, to provide explanations of unfamiliar terms in time, translate and summarize books copied simultaneously. Readers and translators alike have issued both value judgments on the books they read or copy them, as well as to the authors. Towards the end of the eighteenth century, Enlightenment ideas influenced by secularization instruction signs appear, and start reading to be likened to a journey towards knowledge.

Key - words: assessment information, religious reform, the Romanian Orthodox Church, the history book, the Romanian language, religious books, translations.

In first paper - presented last year - have shown that people living in the Romanian Countries until the threshold of the modern age, possessed a great deal of skills described as the information required when defining culture. Specifically, we illustrated the practice of writing books to read them, take them or lend. Following the demonstration, we illustrate how man ages past evaluate the informational content of the books, the dominant view of the importance of these books to defend Orthodoxy. Clarification is necessary because, until later in the late eighteenth-century books was predominantly religious content, namely the Orthodox, for Moldova, the Romanian Country and the majority of Romanians in Transylvania. Aspect that we will pursue is the introduction of the national language in worship, in the general context of the Counter Reformation and religious. The enterprise is possible, because always the most effective weapon was the use of religious clashes own.

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As is known, in terms of politico-religious, XVI-XVII centuries were characterized by numerous disputes interfaith interference generated by Roman Catholics and Protestants, the Orthodox Church. To prove that it is authentic representative of Christianity, religious reform tried to force innovation by appealing to the authority of ancient Christian churches, seeking to accredit conformity theory his doctrines of the Orthodox Church[1].

Polemic of the Reformed and Orthodox design the political discussions, being concerned to maintain awareness of the nation (both in case of Romanians in Transylvania, as well as the peoples of Southeast European and Orient). The Romanian Country continuated Byzantine cultural traditions become almost the only protector of Christianity in this area, as determined by the major substrates policy protection pursued Ottoman resistance, anti-Catholic and anti-Reforms. Cultural aid is only one segment of the economic and political support offered by the more extensive the Romanian Orthodox peoples of this geographical area. Referring to the religious aspect, Ilie Minea say that Moldavia „appears to place the protection of orthodoxy since the days of Alexander Lăpuşneanu. Therefore it was wrong when he wrote that Moscow was the Third Rome because, in fact, the role of protector of Orthodoxy have had, after Constantinople, who said the Second Rome, in the sixteenth and seventeenth century, Iaşi. If Protestants could not make the last act of the drama about Orthodoxy, this is because of Iasi, have sent aid needed" Romanian countries were based on a true theological culture in schools and printing presses that allowed the maintenance of orthodoxy in the East under Ottoman rule. Mentality under which the aid is characteristic of so-called era of „Byzantium after Byzantium", the Romanian princes themselves as successors of the Byzantine emperors, assuming the task of protectors of Orthodox Christianity[2].

In order to motivate the above, we use readers made occasional notes on the books and manuscripts and printed books prefaces, the authors of these texts were assessing the significance of books such information. In a chronological approach, we illustrate the orthodoxy through the support of the Metropolitan Barlaam and Dosoftei editorial, which was consolidated during the introduction of Romanian language Romanian orthodoxy in worship. We briefly describe how the early eighteenth-century readers perceived the Slavonic language reading, then we turn the argument on the translation of religious books and reading religious Slavonic, Greek, Polish and Latin, in Romanian. To achieve consistency of work, we used several works of history itself, the history book, the typography and the Church, which will be referred to the right place. Analyzed period lasted until the year 1800.

The importance of reading is explained in the preface of a chronicle ms. (1766): „what is necessary to read and know the Scriptures? Answer: To know God, for individual redress, for advising fellow"[3]. These principles are confirmed by occasional notes made by readers on the books, and authors of prefaces. For example, in a scrap of *Cazania* (Rimnic, 1748), which the deacon Enochinte Ivanovici gave them Fătăciuni hermitage (Vaslui County) on Christmas Eve of 1752, the cleric confessed that he bought the book: „to read, as saying investigated Scriptures, not that I would be so worthy, but again: the scriptures teach"[4].

A broader statement of the importance of reading books was the middle of the eighteenth century, Paul grammar „by reading the holy scriptures know God and we pray for the forgiveness of our mistakes, we know things for many years past, as we see now: who, how he organized his life and honor, praise and immortal names that remained the best and fearing to dishonor God and the tyrants and unbalanced in their actions"[5]. With books, believers can understand the tenets and won to have arisen when attempting their deviations from the orthodox faith.

Even secular reading books containing little more pronounced, as were the so-called popular books, was bringing benefits. After 25 April 1788, an anonymous scribe was a „notice what it ought to read Alexandria to know the depths of scripture, to know how they were before, how people lived like kings fought and how many wars have been , how many cities were destroyed as they were in heaven and how they fought with all the wild animals"[6].

The question was stated more clearly by the authors of prefaces, at certain times is truly politico-religious programs for the defense of Orthodoxy with the printer. In the first decades of the seventeenth century, the great theologian Petru Movilă understood that successfully defend the ideological assault reformed only by culture, specifically in schools and printing presses. For this reason, the reaction of the Orthodox Church to use weapons meant religious polemics of the Catholic Church, these weapons are books. At the end of the century, the patriarch of Jerusalem Dosithei Notara, a defender of orthodoxy severe, shrewd polemicist and fierce agitator against the Papacy, says the prints are „an invincible weapon against all schisms and heresies”[7]. Work was possible because the books were used in churches to enlighten the faithful on matters of dogma, but also his own private reading.

At first, the official language of Orthodox Church was Slavonic, while the Reform translated of religious books into national languages. In Moldavia, work through the defense of Orthodoxy began in the seventeenth century pattern of Calvinism. At the beginning appeared to Geneva, a *Confession of faith* containing calvinist dogma attributed to Lucaris Cyril Patriarch of Constantinople, who had some influence in Orthodox areas, including Transylvania, on which there is pressure to convert to Calvinism. Reform campaign wearing the official patronage of the princes of Transylvania under Calvinist, Metropolitan of Moldova Varlaam sensed the need for all official responses through books published in Romanian, for ideological clarifications. Varlaam's printed analysis in terms which concern us here, show two stages: first, Metropolitan printed works to enable the orthodox doctrine (*Cartea românească de învățătură*, *Catehismul slavon* şi *Paraclisul Născătoarei de Dumnezeu*). In the second stage, the books are polemical, addressed directly against proselytizing Transylvania Reformed (*Şapte taine ale Bisericii*, *Răspunsul în contra Catehismului calvinesc*), explaining the essence of the Orthodox faith and argued indirectly with Calvinism, which does not allow secrets. Varlaam's books were intended primarily to believers and only secondly priests „known to Calvin to preach God's word in Romanian through a change of faith, Varlaam made a distinction book between priest and layman. If he gave the first Slavonic, by purchase, all the service and typically, the other has given light to the darkness of mind and understand the big questions, *Cartea românească de învățătură*, who was reading the book religious layman”[8]. The papers published in Science were not directed solely Moldovans: As with books of propaganda in Transylvania, they addressed all Romanians, and the matter was explicitly stated in the preface to the Book of Romanian education (Science, 1641-1643). It's obvious that printing activity, Varlaam fit into a program raising awareness of the cultural orthodoxy, Bishop before removing the need to book within monasteries and churches, to be known to all Romanians. In the foreword to the teaching Romanian Paper, Bishop said, „especially our Romanian nation has no book in his book difficult to understand other languages, the reason being the lack of teachers. Therefore, I considered the duty to print the books in the language understood by the people”. Following the printing work of Varlaam, „the church came out of her old circle of action <...>. Now, Romanian language and culture between the church and the church itself was a link that nothing could break the <...>. This language was Romanian Romanians everywhere. These books are less understood that any of those scholars who held <...> to their belief that they were not able to investigate close in terms of righteousness or heresies <...>. Christian Law and Romanian dialect <...> and the church understood this”[9]. Combatant Catholic and Reformed teachings, explaining the gospel was the best way to confront heresy. Metropolitan Varlaam reiterate what was challenged in the *Tîlcul evangheliei* from 1564-1566 and was not sufficiently emphasized in *Cazania* from 1581, printed by Coresi.

The next step Dosoftei Bishop testified that „I immediately researched the book would be more useful for the Romanian to print”[10]. Dosoftei noted that books need to be understood by the entire Romanian people, so many books were the title phrase understandable (*Psaltirea slavo-română*, *Molitvenicul*, *Liturghia*). Since 1673, when he printed the *Psaltire în versuri* (Uniev), Bishop said he intended to „attract able to read human nature”, that „can be higher and the exhortation to prayer ministry of the Holy Church, as is the custom of the elders . Sought to counter propaganda Dosoftei reformed, and the goal was achieved primarily through his *Psaltiri*. By

content, the *Psaltirea* was a book that sought to avoid the ideological pitfalls of the Reformation, which lay reading the Psalms in the language spoken by the people. Prints of this type were mainly for the Romanians in Transylvania, where Protestantism had followers, and Catholicism, trying to expand in Eastern Uniatism method, was another threat to the unity of Orthodoxy. Romanians in Transylvania, are in direct contact with Protestants, could be influenced by fashion versified prayers which, though inspired by the psalms, biblical texts overshadow the canonical authority and traditional liturgical statutes. In this way, the Psalter and the Bible seemed sources of faith whose authority was questionable. To protect them Orthodox Romanians in Transylvania, and undoubtedly, those ministering to himself, the religious verses circulated increasingly, the versified psalms Dosoftei following the biblical text. To prove that the Psalms translated into Romanian are the same as those of Slavic, Dosoftei has printed in two columns, with the Romanian Slavonic version is clear evidence that they are not distorted by translation in the language. Letter to Prince Duca included by Dosoftei in the *Psaltirea slavo-română* (1680) is a powerful argument in favor of the national language as sacred Scripture in a language not understood is that „a garden locked" as a „fountain sealed" whose goodness remained unused[11]. Dosoftei classic text paraphrase Corinthians XIV, about the language of worship, commonly used in printed Protestant „Seek the soul to <...> know the meaning <...>. He explained that teaches people <...> speaks edification and consolation <...> that the church would rather speak five words to understand, and teach others, than ten thousand words in a language unknown <...>. Therefore we tried and I brought the Romanian understand this holy book. „A measure so radical as it must have seemed at the time waiver to Slavonic be well motivated to cancel any opposition or suspicion of heresy. The arguments of authority Dosoftei proved that the Orthodox Church was not against the use of national languages in worship. In 1679, when he appeared *Liturghia*, Bishop said that he printed it in Romanian as „to understand all Dumnedzeu his faith" and to use priests „who do not understand the Slavonic or Greek"[12]. How great was the audacity of Dosoftei to remove cultural slavonism by printing ritual books in Romanian suggest Metropolitan Theodosius of Romanian Country. Printed in 1680, a year after Dosoftei, *Liturghia* in Slavonic, with only the guidance of typical Romanian, he said in the preface that the whole Mass „our language has changed, I did not want, nor have I dared"[13]. Dosoftei, in turn, has done everything possible to be committed to religious services everywhere in Romanian Romanian Orthodox Church where they were.

The fruits of labor were seen Dosoftei Metropolitan later, after his disappearance from the political-religious scene of Moldavia, in 1697, when the liturgy was printed interpretation thereof. In the preface written by Hetman Lupu Bogdan, this is Prince Antiochus Cantemir address as „My lord I have made this book only for man but for all the sacred liturgy the truth is that when he serves, not only for priest, but for all who listen. So do sower, not only for his food like wheat, but also to feed others. So do merchant who walks on land and sea, not only bring goods for himself, but also necessary and bring goods to others <...>. A gem like this that we lacked in our language <need> to understand the people <because so far> to know the secrets and rules of the Orthodox faith was not possible, primarily from lack of language teaching and misunderstanding"[14].

Confirmation will appear Hetman appreciation in the first half of the eighteenth century, because, over time, connoisseurs of Slavonian are dwindling. Therefore, on 2 March 1726, a teacher Ion wrote on *Tetraevanghel* „is printed in Alba Iulia, the reader must be very skillful to read, because it is hard to read, being in an unfamiliar language". After several years in May 1733 (7241), one Costantin of Vatra Dornei too bitter note on p. 106 of *Codicele voroneţian* (beginning of sec. XVI, Ms. Rom. no. 448 Academy Library Romanian Bucharest) that „this book was written in Slavonic and not good for anything". At that time, however, between 1 September 1733 and 34 August 1734, monk Lazăr of the hermitage Bratesti knowing how to read the *Înălţarea avvei Dorothei* a fifteenth century Slavonic manuscript (Ms sl. no. 160 from BAR Bucharest) wrote with satisfaction: „Oh! what good soul is in this book, you and I, humble sinner, and more I read it all"[15].

In the Romanian Country, lived many scholars, refined connoisseurs of theological subtleties, of languages and book production. After final installation of the Romanian language in worship, in the middle of the eighteenth century, they developed an intense activity of the

translation of religious books Slavonic, Old Greek, Latin, Polish into Romanian. With a broad cultural horizon when copied a book, some of them were able to make even the bibliography editions. For example, expounded on the *Psalmii lui David* (1742, Ms. Rum. No. 84, from Bucharest BAR), noted: „Certificate of Christian law, witnessed by her enemies, namely Jews Samoil rabbi teaching, showing errors Jews after the law of Moses, and after you have hope for the coming Messiah. Blackamoor first translated from the Latin language of <...> Bolhomine Spanish, in 1339, in the 11 days of Venedict Pope of Rome in Venice. And learning of the Jews, have bought each of these books were found to burn them, then the second city of Matera was printed in Latin by Father James Radlinskii Polish, teacher of theology, 1733, in Lublin. And now translated from Polish into Romanian by Dima grind, being corrected in 1742 <...> by Costandin Lupoianul"[16].A decade later, on 1 December 1753 (7262), an Ion child of house Dinu Cantacuzino paharnic, copy for his master a *History of the Hungarian Land*, translated from Latin into Romanian by Miron Costin, great logofăt, who translated more books. And there are more *Chronicle* the country, some translated by Grigore Ureche magistrate who was good but not as well-formed, with all kinds of teachings, as Miron Costin[17].

Raphael monk at the monastery Secu, 20 March 1761, translated and copied ending Efrem Sirul, *Cuvinte şi învăţături* (Ms. Rom. no. 107 from BAR Bucharest), did what we call critical edition. And asking forgiveness for any mistakes made „in translation from the Greek words, as far as he could and even tried to adapt the words had a Romanian translation, not deviated from the original Greek"[18].

An anonymous scribe after the year 1773, translating everything from Greek, not as easy to handle, „this place is not understood very well how I translated in Romanian, but what to do if our language has few words, and the Greek is complicated. „At the end of the century, November 24, 1790, teacher Nechita by village Dorna Candrenilor, in the Bucovina already under Austrian rule, would meet similar difficulties to translation of *Mîntuirii păcătoşilor*: „Your readers <...> of you find mistakes in the letter or words to correct us gently and not condemned because it is <...> books translated from French and Greek and not well understood "[19].

Possessing a solid theological culture, some translators and offered explanations of unknown words or difficult to understand. Was the case Athanasius of Crete, who translated the ancient Greek in the spoken *Cartea de suflet folositoare* a Sf. Ioan Scărariul, translated in into Romanian by monk Nichifor, in 1775 (Ms. rom. no. 3024 from BAR Bucharest): „this letter have been so in his book on Greek who translated our language and put <...> Crete Athanasius and explanations where smart too complicated and difficult to understand"[20].

Good intellectuals, some clerk while books summarizing the when he wrote the translation. On 9 July (7255) 1747, deacon Cozma at the monastery Neamt wrote wonders *Minunile Maii Domnului* şi *Viaţa Sfîntului Vasile cel Nou*. „And you know brothers that the Spirit is a book printed in Greek, but I wrote only so, briefly". So did the monk Pachomie, abbot of the Skete Lapos Trotus Valley, between 1 September 1753 and 31 August 1754 (7262): „this book is translated from a book printed in Moscow and others are written from a manuscript, but I thought that they were necessary". Sometimes, however, the same Pachomius, observation of the texts he copied. Also in the period between 1 September 1753 and 31 August 1754 (7262), copied *Chinurile Domnului nostru Isus Hristos* (miscellany, Ms. Rom.. no. 5454 of the BAR Bucharest) „and i wrote *Otecinic:* I never said, nor did I leave anything"[21].

The case was not unique, explanation of this manner of proceeding provides a teacher Gantaon Theodore from the hermitage Hirjauca, 24 March 1780 (7288), when he finished writing *Scara lui Ioan egumenul Sinaiei*: „the rich will get little help from a poor and little praise will hear an honest man from one unlearned. Therefore, I, humble, knowing that poverty teaching me, anything I put my knowledge, but as we found in the original, so I followed"[22].

Other people make judgments of value on the books they read or copy them and to the authors who wrote before them. In February 1753 (7261), monk Lazar read at *Viaţa Sf. Vasile cel Nou* (c. XVI, Ms. sl. no. 133 of the BAR Bucharest), „and they are all straight and true". After 1774, the monk Lavrenti Chirilescu looked and read a *Ceaslov* (Rădăuţi, 1745) and is just the small

Catihisis print in 1774,at the Carlovăț. I taught myself to schools in Bucovina". In 1794, Iordachi Chirescu inform their readers of the book he translated and copied a „history that it seemed so interesting and well written, that I consider him worthy to be translated into Romanian and hope that this view mine is not wrong"[23].

Copying an old *Letopiseț* denote it as author by Russian monk Nicodin Grigorevschi, John Cliciuc diac of village Tărnauca, appreciate the culture of his predecessor, on 20 October 1772: „that teacher monk Nicodemus, as witness his letter, it was known that was a very skillful in teaching"[24].

Sell provided the opportunity to read the Romanian language, more and more people are doing this. Very sought religious guidance books were *Viețile Sfinților*, used both in churches and individuals as their own reading. For example, an anonymous reader in two places an annotated manuscript of saints lives since 1737, held today at the National Library, no. 11 405. On f. 91, where he described the life of St. John Chrysostom wrote, „dear reader and lover of the Saint, if you want to know more about St. John Chrysostom, about bringing the city's relics and restore the Coman to Constantinople, read the book, the tab 126, Prologul, January, day 27". On f. 238 v., where he described the life of St. Nicholas, made a brief summary of his knowledge: „of the great relics of Saint Nicholas, were brought from the city liquor Mira town of Bari, in 1096 after the birth of Christ <...>. At Bari lies in a stone church, there is a large monastery, there are more than 500 monks and there are many churches around the great stone churches and cells <...>. Until they are 50 miles from Rome to Bari in the south and Hungarian Country, the city called Bardiova, ie the Polish border, 36 are two hundred miles, and from Vienna, one hundred 36-mile"[25].

Towards the end of the eighteenth century, Enlightenment ideas influenced the reading was likened to stepping on a gateway to knowledge, and notes that suggest this are numerous. Monk Ioanichie Sion wrote on *Varlaam şi Ioasaf* (Ms. Rom. no. 9 from BAR Bucharest), 31 August 1786: „this book is the gate and we left it open to whoever will come to read through -but, great and beautiful things to see and much to gain spiritual benefit". After several years, on 25 February 1789, a clerk in the Neamt monastery, preserve the book as a gateway to knowledge, reading much like a journey that will be useful only if done thoroughly. In 1791, another anonymous idea went further, noting that had taken a journey started before the end[26].

Was not only direct reading brings benefits, but also hearing the text read by those who knew the book. Between 1785 and 1786 September 1 August 31 (7294), clerks Ghiorghie of Şerbeşti (NT) bought *Priaminunatile şi înfricoşatile… videnii* (Ms. rum. no. 1596 of the BAR Bucharest), because „this book <...> beautiful soul contains useful lessons to all Christians, both those who read with understanding, and to those who hear". A possible sentence of up to what is stated here is provided by the steward Athanasius Metropolitan of Iasi, where in 1800 he copied a Hronograf „carefully reading and listening to someone with things that were done in the past may discover things that will make from now on"[27].

In conclusion, it appears that the importance of reading to preserve the Orthodox faith is affirmed both in manuscripts or printed books prefaces, marginal notes as well as the readers. Begun under the impulse of religious Reformation in the sixteenth century, the introduction of Romanian Orthodox church in worship was made possible by politico-religious program carried out systematically by the State and the Church. By the middle of the eighteenth century, the Slavonic language was substituted in worship, and from then on started another stage of culture, the modernization and expansion of the cultural horizon. A manifestation of modernization was translated books in the languages of the era in Romanian culture. In this process, the translators have demonstrated skills many times now called „assessment information. Many intellectuals, connoisseurs of theological subtleties, of languages and book production were able to make editions of literature and criticism, to explain unfamiliar terms, translate and summarize books simultaneously. Readers and translators alike have left us are value judgments on the books they read or copy them or to the authors who wrote before them. Towards the end of the eighteenth century, Enlightenment ideas influenced by secularization instruction signs appear, and start reading to be likened to a journey towards knowledge.

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The Holistic Philosophy of Education in a Literate Society and Its Correlations with Motivation, Behaviour and Performance: A Cause-to-effect Study on 60 Romanian Teachers

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Abstract

An information literate society gives a great credit for its accomplishments, or their lack, to education. While literatures on the status and the fundamental roles of the teachers, as well as their efficiency in the process of education have been subject to many debates, however little is written on the causes that produce the involvement of the teachers in the process of integrated education. Thus, in the attempt to legitimate what The Prague Declaration states on the education professionals, that is, the need to engage in encouraging students to `examine the causes of behaviors, actions and events`, this paper argues for a cause-to-effect focus, too, answering to the following questions: how could teachers perform actively for an integrated curriculum, for a review of the new tendencies in education into a literate society, and how could they engage more in the informative process? A recent study that I have conducted on March-May 2010 reveals some of the interrelated aspects that include motivation, satisfaction with work and social performance, with direct effects on the teachers, their colleagues, as well as on the students and their outcomes in all fields of education. By analyzing the influences of the internalized philosophy of education of the 60 Romanian teachers, the results show interesting connections between the holistic points of view on education, the know-how correlated to personal compass, including intrinsic and extrinsic motivation, as well as psychological well-being.

Keywords: information literacy, holistic point of view on education, motivation, behavior, performance

1.Argumentum. Nowadays, the Romanian educational record revolves around major changes, such as a new law of education, a new horizon bridging the gap between a post-communist influence and an innovative era, in and out of the educational system. Despite the steps made so far, the educational system isn't yet aligned to such standards that would allow both the students and the teachers comprehend and achieve life-long skills that would prepare them for better respond the challenges of a continuous information-evolving society. The purpose of the paper is to signal one aspect that lies behind a group involved in the process of education, i.e., the teachers, subjects to a study in which I intended to reveal the

backup of the reasoning of attitudes involving in motivating students to better emerge the information literate society in which they live in and have to face to. In the beginning, let us first see how a simple definition of information literacy points to this particular take:

> Information Literacy encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of lifelong learning. (1)

The study afterwards points to the very complex and competent ability of the Romanian teachers to cope with the issues of the new informational era, to cope with the new emerging proficient skills of an outer literate society, but seen from the point of willingness and motivation. Another easy-to-grasp definition that applies both to teachers and students, points to a more practical aspect of the information literacy, as a background for future life challenges:

> Over the course of your life, the more you learn and thereby come to know, but especially the sooner you master and adopt proficient learning skills, habits and attitudes - finding out how, from where, from whom and when to search for and retrieve the information that you need to know, but have not yet learned - the more information literate you thereby become. Your competency in applying and utilizing those skills, habits and attitudes will enable you to make sounder and timelier decisions to cope with your personal and family health and welfare, educational, job-related, citizenship and other challenges. (2)

Furthermore, the practical basis stated previously is impregnated with education, as a fundament for subsequent changes of view. Laska, (in Knight, 1989, p. 10) (3) defines education as "the process that produces the capacity to manifest a new or changed human behavior, or that increases the possibility that the new or changed behavior be obtained by an *adequate stimulus*, taking into account that the new or changed behavior cannot be explained on the basis of some processes or experiences." This vey *adequate stimulus*, in my study, are the teachers, that, in their turn, need to find resorts to give the proper stimulus to their students for better facing the life challenges. Moreover, a holistic point of view on education, as a fundamental in this study, implies a threefold action: mind, body and spirit, as later shown.

The statuses and the roles of the teachers have important implications due to their personalities, too. Iucu (after Pop, 2004, pp. 69-70) (4) states that teacher`s personality has the following elements: basic personality, psycho-pedagogical ground, psycho-pedagogical representations, beliefs, psycho-pedagogical convictions, shaped personality, educational style and managerial style. For this study, I will take into account some of these elements, such as the psycho-pedagogical ability, which implies, among others, the affective-motivational issue,

that is motivation and affectivity. As to beliefs – psycho-pedagogical convictions, Pop (2004, p.71) shows that '*the* major element of belief is *the* strong implanted conviction in the structure of personality, lived in the affective plan'. On the psychological ground, this belief implies three plans – cognitive, affective and volitional. In the teachers' behavior, we might say that 'the volitional forces realize the preparation for an action on the behavioral plan', stated by the same author. Thus, we may state so far that there are plenty of reasons that should be taken into account when screening the involvement of teachers in the information literacy, one of them being motivation.

We may define *motivation* as the agents of economical, moral and spiritual nature of the individuals to produce contentment, by fulfilling some individual or group needs. *Motivating* is different from motivation. The action by which someone motivates is called *motivating*, and the conscious or unconscious actions that stir the people in taking decisions, and, implicitly, to act, is called *motivation.* 'Motivation is the action of the inner and outer forces of the individual, conscious or not, as to determine his behavior' (5). The literature makes a distinction between various types of motivation, from which I will mention only two, the most relevant for this study – intrinsic and extrinsic motivation, with their different bases.

When speaking about performance, I will refer to it as a relational issue – how efficient is the understanding of the philosophy of education when being internalized in the educational ground. In this respect, performances are the output between abilities, motivation and the role that the individual plays in an organization. And motivation is the generator that stimulates the individual in achieving new abilities and developing his efficiency. Rotundo and Sackett (2007, p. 37) (6) assign to the performance actions and behaviors, all these being under the control of the individual, who decides to what extent they contribute to the scope of the educational system. Thus, according to this idea, we may state that the performance may be defined as behavior, but opposite to the results of behavior.

In the following section, I will present a study in which all the major issues tackled in this argumentative lines will be taken into account and shown how they relate, in a cause-to-effect approach, to the results that the Romanian educational system lacks so far, in major lines, even though to and fro have been made small paces.

2. Study Case. In my study I proposed to discover the way in which motivation and organizational behavior correlates with the philosophy of education internalized by the teachers of a protestant school organization. For the analysis, 60 subjects were questioned, from all over the country – teachers that teach in a school with a religious specific, having as a

common element of their organizational culture the religious membership. The period when the questionnaires were applied was April-May 2010.

The supposition from which I started my approach wanted to demonstrate that, if the philosophy of education from these religious trait schools is internalized by the teachers that teach there, then the amount of this philosophy contributes positively to the development and extending of the motivation, behaviors and performances on the behalf of the teachers.

2.1. Methodology. The study is an explanatory one, and the method I used is the empirical sociological approach. It is a particular case without the claim of being exhaustively, the findings being limited to the subjects in study, not to a national test specimen. Of course, general ideas could be depicted and generalizations could be made, if taken into account larger samples, but this is not the case. As a technique of collecting information, I used the questionnaire, self-administered, containing two parts: closed items, starting from general questions, of identification, towards questions with particular traits; the second part of the test contained open items, in which the subjects could write down their own opinions about certain topics. The information of the first part was pre-codified, the subjects being asked to answer from 1 to 5, showing if they agree or disagree with certain statements. When interpreting the questionnaire, I used both the qualitative and the quantitative methods, checking the validity and other aspects that include the interpretation.

2.2. Findings. The philosophy that lies as a fundamental in the educational institutions in discussion, that have a religious trait, adds to the motivational agents from a laic school, a new motivational agent, which is intrinsic and has extrinsic aspects. The teacher is motivated not only by the interaction with the self, the colleagues, the principle or the students, but also by the challenge of the holistic point of view: the development of the threefold principle when teaching – mind, body and spirit. The interaction with a supreme force, when nurturing the spirit, leads to greater personal satisfaction, and also has as consequence on the adjustment of the non-motivational agents. Because motivation is achieved according to some principles that are stable and involve a supreme force, for Christians being God, it is shown from the subjects' answers that the context and the changes of the circumstances don't touch this type of motivational agent.

Beside an efficient communication between fellow colleagues, membership has a significant role in influencing the behavior and thus, the relational performance. Motivation is the one to emphasize and facilitate the development of two personal traits: dutifulness and

improvement. These positive attitudes determine the performance in the environmental context and also provide satisfaction to the teacher. The goal in achieving performance at school becomes a common ground with the way in which the teacher arrives to satisfaction and fulfillment.

Taken into account the holistic point of view in education, it was proven that, if teachers know the benefits of a holistic education, as provided by these religious-trait schools and not only, have the fundamentals of education responding to the major life aspects of the students – intellectual, spiritual, physical and social. As to the philosophy of education, under the condition of being internalized, it seems that it influences positively the behavior, taking into account some constrains, such as the competition, life-long learning, internalization of the role attributions and others.

3. Conclusions. Even though the study and its findings were presented briefly, they show us a particular reality. I strongly believe that, if extended to a national scale, this study would prove the fact that, if teachers don't have a stable philosophy of education to which to relate to, with a perspective that takes into account a holistic point of view, it's useless to speak about reforms in the educational system. There is a strong need of a realistic concern in seeing the causes why Romanian educational system has such a lack in answering to the challenges of the life-long learning. There is a strong need in answering the question why information without a practical, skillful basis is proven to be defective. And why, as practice shows, an educational system proves inefficient if it doesn't prepare the student for the challenges of the present. Of course, as a teacher, I could observe myself some of these lacking aspects, and the solution I propose comes from direct observation, too.

Therefore, more studies need to be conducted as to show the main causes that don't lead to maximum efficiency in what concerns the spreading of information literacy in the educational system, according to the trend in this field. Small wages, an inheritance that includes competition in the public school, lack of competence on behalf of the teachers, defective evaluation at class, grading according to scales that not always show the real competencies and abilities, a huge amount of information that isn't proven enough to be efficient when graduating because lacks practice, the trend that makes the students spend time on internet and take unstructured information from it – here are some of the major aspects that could be subject to further study. Nevertheless, if a system wants to develop, has to invest in its prospects. If the Romanian educational system proposes, in the person of its representatives, to have a better emergence on the worldwide information society, with real

accomplishments, has to start from its roots, to create a climate for a safe and effective development of the education – one of the most important fields that secures the development of a society – and it could start from re-evaluating the teachers' motivations, related to relational performance and behavior, as a stimulus for their students.

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Use of information technologies and electronic resources in education – the approach and experience of the Kharkiv National University of Economic.

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Abstract

Interaction of education and electronic information resources has been analysed. The main types of electronic resources are described. The interrelation of motivation of information needs and multimedia training is considered. The basic approaches to the acquisition of knowledge and technology of e-learning are given. Advantages of the electronic information are shown. Evolutionary development of electronic storehouses of the information has and the electronic storages of information us a e-learning tools has been analyzed. The resource and the service approach to providing information of the educational process has been investigated. The experience of practical cooperation between the Kharkiv National University of Economics and the World Bank in organizing information to support education is described.

Keywords: e-learning, electronic information resources, multimedia training

1. Introduction

Several properties of electronic and multimedia information, particularly, low cost of copying and transmission channels of local and global computer networks, as well as new technical communication capabilities, have created unique conditions for globalization in all spheres, including education. In this avalanche growth and variety of forms of electronic information dissemination became one of the most important attributes of the modern global information world [1].

2. Interaction of education and global information resources

Globalization and informatization of education, improvement of the information support of the educational process and scientific research suggests, among other things, the creation and using the electronic information. This becomes especially important in terms of financial and economic crisis which had led to the sharp cost reduction for all kinds of information printed sources. But in using electronic information in education and research there are still significant discrepancies in the terminology, requirements and evaluation criteria for its custom properties, also the development principles, strategies and methodologies, implementation and using in practice the different versions of educational and training products based on multimedia and electronic information.

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2.1. The main types of electronic educational resources

Informational electronic educational resources can be divided into such electronic learning tools: instrumental programs and applications, Internet resources. Talking about modern electronic

learning instruments, we should accent, that all of them are not limited to electronic textbooks, training or test programs. A new generalizing concept appears, called "computer training materials", which combines all the e-learning tools, created and supported via appropriate specialized software.
The most important factor for using them in the educational process is substantive and methodological quality of these resources. In practice, the most important are such e-learning tools' opportunities: knowledge adaptation in content and submission form to the specific conditions of students' training, levels, requirements, opportunities and replication, placement of materials in electronic form. The instrumental programs should be mentioned, that allow you to create your own elements of automated training courses. The most common type of such programs is the shell applications, which allow to fill the specified template format to a specific educational material.
Such shells can be focused on universal subject content or on the special knowledge area. Usually instrumental applications consist of two parts – teacher and student. Working with suck tools is implemented both independently and in multiplayer mode, with all materials created and posted on relevant websites and resources.
The tendency to unify resources is an important feature of modern multimedia teaching systems. As the most convenient for users (both teaching and students) are resources that involve minimizing the requirements on computer skills and the most unifying their work. The example of this program type is instrumental e-learning tool for creation testing tasks, called 'Hot Potato', developed in the Victoria's University (Canada). It is used only by teacher, and student performs tasks in any web browser. This program has found wide employment in the world for creating computer-based training materials on various subjects in different languages, their placement in the network and permanent updating.
Speaking about Internet resources, the following should be mentioned:
- web-sites, dedicated to specific areas of education, a particular subject area;
- web-sites - information representations of educational institutions, educational organizations, publishers, producers of computer-assisted training facilities;
- electronic newsletters on educational problems;
- informational and reference portals;
- resources of electronic libraries and special data bases.
Sometimes to distinct a website and portal is quite difficult. Typically, a portal is a complex of sites connected to the Internet via high-speed channels, which has developed the user interface and provides single access to various information resources and services, in the conceptual and substantive point of view, that directed at specific audiences. Web-site is the information, executed properly (with help of http-protocol) and available online to all users.
From the user point of view, the Web sites and portals are different in quantities and composition of available services and services provided.Portals have wide variety of resources, e.g. electronic books, journals, articles, dictionaries, reference materials, databases, audio and video, forums and conferences. They also allow users to execute contextual, thematic search for web sites and the Internet in general.

2.2. Motivation and information needs of multimedia learning

It is obvious that learning is largely caused by information needs, which are satisfied by access to relevant information resources and sources. Information needs define the type of motivation (adaptation, competence, self-actualization, the need for sense) and its level, the degree of awareness and targeted. According to the last, the following can be identified: needs to be informed, to have an informed opinion, to own factual information, elevate mind, to understand the issue, deeply study the problem [2].
Processes of receiving the information include technological (computers, communication channels) and economic (paid, free, shareware) ones, access and retrieval of information, information culture skills. At the same time (in the context of globalization) information for the selection of work, profession, partner, behaviors, perceptions of health and illness, worthy of public and personal life values, how to achieve them, is unstable and unsustainable [3].

The dynamism of the global environment and volatility of society demands from individual adaptability, responsiveness and responsibility in the decisions, high culture consumption information [4]. That involves awareness of information needs, knowledge of receiving, processing, assimilation ways, the choice of strategies for search, identification of its location, the ability to compare and evaluate information from different sources, ability to convey information to others using certain methods, using of existing and the synthesis of new information for creation of new knowledge. At the same time, the information sources characterized by its quality, completeness, query relevance.

2.3. Acquisition of knowledge and technology education

Knowledge acquisition can take the form of the individual requests for getting the information to solve a problem or as a systematic process focused on any target, organized training in various forms. It is possible to identify a number of learning models based on concrete experience, introspective observation, abstract conceptualism, active experimentation [5].

Specific experience includes learning through accumulation of experience with emphasis on feelings and intuition rather than reflection and on practice rather than theory. Introspective observation is based on comprehension of knowledge and situations through observation, understanding, and not practical use. Abstract conceptualism uses logic, ideas, concepts, theories. Active experimentation involves the practical use of knowledge and skills rather than reflexive understanding.

The study of the these models' attractive aspects has led to the appearance of new learning technologies. Each of them involves a low cost of providing educational services, development of cognitive students activity, access to global sources of information support, continuous nature of learning, systemic synergistic combination of individual studied subjects and specialization, rejection of the outdated procedural model training and transfer to teacher- and student- oriented models. Let's consider some of these technologies.

Instruction Distance Learning involves remote delivery educational materials in electronic form to a student. Education is provided by the relevant content information, illustrative and reference data, control tests and tasks, as well as it ensured by regular on-line consultation. In this case, it is possible to select the best modules with a standard set of learning materials prepared by various authors.

Resource-based Learning is aimed to holistic approach to the process of learning. It involves not only the knowledge and skills receiving, but also the independence development, activities in solving the problems of the widespread information resources using for the practical solution of tasks, that require information from different sources. Students have to develop their own skills of self-knowledge creation instead of receiving already done knowledge. Here is the positive side: the development of independent students work, building skills to determine what and how to learn, where to find the necessary information, how to capture and interpret it, as well as skills improvement of interaction in information processing, organization of information communication and its sharing.

Interaction of students with a variety of disparate sources (books, magazines, newspapers, media, television, Internet, personal contacts) teaches them to find information in different ways in different places, using different methods. As a result, confidence, self-learning are formed, and information goal's achievement purposes contributes to the emergence and consolidation of information-assembling and information-processing skills. Such training is like real life, where information search, its interpretation and using are always needed. Developed skills in information handling can be used in the future. Positive side of this technology is also learning in the context of cognitive, social, practical purposes. At the same time the development of group interaction, critical discussions, brainstorming, etc. are provided.

Another approach is learning through collaboration (Collaborative Learning). It reflects the reaction of the scientific world on the system describing complexity the dynamics of the external world, requiring the using of collective knowledge. This approach uses discussion, dialogue, the optimal allocation of participants to solve the problem, which makes it possible to combine collective and

individual interests, that, in turn, provides a synergistic effect. However, some arised conflicts in the learning process include mechanisms for adaptation, creativity, self-actualization. As a result, a higher level is achieved.
The kinds of mentioned technology are Organizational Learning, Self-directed and Self-organized Learning. The first one focuses on groups learning, taking into account the fact that the whole is always more complicated than the simple connection of its parts. In this technology, everyone has his own point of view, based on his knowledge, expertise, observations, interpretations, assumptions, generalizations. Everyone protects his opinion in the process of collective interaction through discussion. At the same time the balance is maintained between upholding his point of view and collective opinion, that leads to the emergence of group synergy. Information technologies provide here a database, and other information resources, provide the relationship of various knowledge branches, the interaction of the participants in the process.

2.4. The advantages of electronic information

Multidimensional nature of learning and training acquisition is closely linked with the characteristics of electronic information, that had caused the global information revolution [6]. One of them - the reproduction's low cost of electronic information, its transfer to users anywhere in the world in real time, the ability to create and use global in size, scope, coverage, speed of world information resources.
Multimedia component is extremely important - a digital format of various information (static and dynamic images, audio, video information, virtualization) that provides high quality and innovative tools to effectively impact on the psyche, the consciousness of individuals and their groups.
In addition, there is a unique possibility of an agreed information exchange in real time, in any amount, for any users' number, giving the possibility of global social, educational networks, based on interest, teamwork, mutual cooperation of the active participants. Global information and computer technologies have great potential, because them make possible the fundamental innovation and quality improvement in education, including the provision itself and retraining throughout life.

3. Electronic information repositories and their using in education

The concept of "electronic information repository" covers various types of global and localized information products, differ in filling, content and organization: digital libraries, knowledge bases, distance courses, online tutorials, portals, knowledge centers, web sites, electronic journals and conferences, blogs, wikis, articles, full-text databases, information retrieval systems, online courses, training systems and so on (list is not exhaustive and it remains open). Speaking about the development of educational electronic information resources, three parts can be devided: the evolution of information flows and their interactions; information processing tools, management of the educational process and the using of electronic communications and computer technologies.

3.1. Evolutionary development of electronic information repositories

Initially, the essence of educational electronic media was a simple accumulation of electronic resources for educational purposes. At the beginning they were digital copies of publications, then they began to expand with the addition of multimedia resources (plans, presentations, graphics, animation, audio and video lectures). Afterwards, the extensive development of educational electronic media required changes due to not understanding the importance of the quantity of resources, but the end-user access streamline to them, regardless of storage location, the so-called concept of "library without readers and literature".
The changes affected both the structure and form of information resources and their relationships. Independent existence of resources supplemented meta descriptions, which provided the classification and indexing, the provision of hardware and software tools for information search and navigating through it, new linguistic and mathematical models of their internal structure and content, that created the possibility of structural analysis of the resource's text, the relationship

formalization with the structural elements of other resources (links to dictionary entries, thesaurus, used books, quotations, terms).
Creation of free access to distributed information at any time and from any location (i.e. single point of entry into the global information space) provided the end user to access any information without the need for understanding and tracking its location in a global multimedia environment. Providing this single point of entry is achieved through hardware and software standardization and unification of communication and information flows (resource descriptions, sets, tools and communication formats of their views, information and linguistic support of information processing, visualization resources).
In turn, this unification has created the prerequisites of structuring, information granulation, its re-using in other environments, mutual access to resources and services of different developers. This has contributed to the overall work of distributed authors, educational institutions, scientific teams to create virtual educational tools, social networks, services with Web 2.0 and Web 3.0 technologies, ensuring the knowledge using and capacity of their users and contributors.
Thus, the development of information processing technologies has reflected the major conceptual challenges of a globalized media society in the direction of information (information about objects or phenomena that are requested) – knowledge (information in problem-practical context, that stimulates action) – wisdom (knowledge, tested and proven time).

3.2. Resource and service approaches to storage, processing, access to electronic information

Currently, most digital electronic storage is not completely solved the problem of meaningful access to the accumulated information resources in the texts. Available automated technology of scientific processing and cataloging generate links to information based on the names (annotations, key words, authors), excluding the content of the information. Most educational computer information systems have only fragments of intellectual consideration of the texts' content and a focus on knowledge (problematic representation, multi-level interpretation, explanatory properties, semantic analysis of queries, the ontological model of subject area).
Further knowledge formalization in educational electronic systems can provide the Web 3.0 technology with using of "Semantic Web", that will make the Internet information more structured via using of universal resource identifiers, and metadata languages.
So the development of electronic educational resources from providing easy access to educational information leads to the automated management of global information resources. In this case, means and possibilities of educational electronic media can be divided into resources and services.
Resources – are traditional tools to access on-demand and user demand. The formation of documents' databases is enough independently from their use, that giving rise to the dominance of the accumulation process. Accumulation of large amounts of resources becomes the system's goal, and the final motives and purposes of their using are determined by end-users and they exist outside the system's functionality. If on the early stages this situation was acceptable, but now it doesn't correspond, and even often directly conflicts with the needs of the global information society.
Services, as the components of electronic information storage, can in fundamentally opposite way manage the maintenance of electronic information resource's users. They create, analyze and use the document object model, take into account not only its formal features (publisher, author, title, year of publication, keywords, systematic classifier's indexes and other), but its role component in the information field.
Thus, during new document's admission, the system (if necessary) takes steps to inform, notify interested users about this document, planning of tasks (execution's scheduler of the tasks associated with the document), control, monitoring of the implementation process and its results. If the received documents require special accounting rules, using, treatment (restricted access, licensing, quotas, passport, customs control, etc.) – the necessary action should also be initiated by the service itself automatically.
Thus, the service approach is based on understanding and formalization of the objective processes of interaction between the information subjects relationships and scenarios of their interaction. Thus, if the resource-based approach focuses on the quantitative accumulation, unification of

accounting and using of information resources, services are directed on the qualitative accumulation and growth in the number of information resources using scripts themselves.
Together, these approaches give on the one hand – the stability of a sharp increase in the number and kinds of documents (resources), and the other – to develop and create innovative ways to use information (services).

4. Cooperation's experience of Kharkiv National University of Economics and World Bank in the information support for education

For the country's education system as a whole, as well as individual educational institutions of Ukraine, like many other developing countries, it is necessary is to achieve (recovery) level of education, which is necessary for the existence of competition in the world as the state's economy as a whole and of individuals. An important mechanism for implementation, transmission, distribution experience economies based on knowledge, that are characteristic of advanced industrialized countries, are international organizations and institutions such as UN, UNESCO, UNICEF, the International Monetary Fund, World Bank.

4.1. Center for Innovative Knowledge World Bank in Ukraine

The center of innovative knowledge World Bank in Ukraine is the example of a modern approach to the creation, using of global multimedia information resources in the educational process, dissimilation of the world experience and implementing it in higher education in Ukraine.
It was established on the basis of Kharkiv National University of Economics (KNUE) to provide the public with information about the World Bank, projects and programs, that are financed by the Bank, as well as representation and a broad range of researches on various issues of economic and social development.
Services of Center for Innovative Knowledge World Bank in Ukraine are free. Visitors have the opportunity to use electronic resources, World Bank Group, get unlimited direct access to the publications of the Bank and other materials on development issues. Center for Innovative Knowledge of the World Bank provides these services in accordance with the signed Memorandum of Agreement between KNUE and the International Bank for Reconstruction and Development dated 17 January 2007.

4.2. Regional Depository Library of the World Bank

Also at the library of KNUE operates a regional depository library of the World Bank. It implements the policies of the World Bank concerning the information's disclosure about its activities and open access to the documents. There are available in printed and electronic publications of the World Bank on global development issues, economic and social policy, struggle against poverty, as well as researches on separate countries, economic researches on sectors including macroeconomic analysis of Ukraine's economy, an analysis of its individual sectors and coverage of other issues.
Electronic Library of the World Bank is a portal that contains the fully digitized books published by the World Bank. The text of each publication is fully indexed, that allows you to search the required data not only in name, but also on key phrases and specific words that are contained in the text.
The electronic database contains complete data on all projects financed by the World Bank in developing countries and makes it possible to get all the information about the projects, including the complete project documentation.
Documentation directory contains lectures, reports, researches and memorandums published by the World Bank. Flexible search allows you to set clear criteria for selection and retrieval of documents. The library provides publications and electronic resources of the World Bank for general users, representatives of local academic and professional community, other university and public libraries in Ukraine, and also provides contact information for distributors of official Bank's publications. Among the available publications and online resources of the World Bank: World Development Indicators, global and local financial data, electronic library of the World Bank, its annual report, researches on assess the impact of World Bank project on the environment.

KNUE library provides free Internet access to resources such as: www.worlbank.org/publications (electronic catalogs, electronic resources of the World Bank), http://www.worldbank.org/data (World Development Indicators, WDI), http://www.worldbank.org/wdr (World Development Report), http://www.worldbank.org/prospects/gdf (Global Development Finance, GDF), www.worldbank.org/elibrary (electronic full text library of the World Bank, login: khneu, password: khneu).

4.3. The project «Skype-videoconference" of KNUE and the World Bank

The pilot project «Skype-videoconference" of Center for Innovative Knowledge KNUE and the World Bank started in 2010. The project objectives are to enhance and expand the scope of the Center for Innovative Knowledge of the World Bank in KNUE and transfer of knowledge through a regular Web-based workshops on World Bank researches for teachers, graduate students and other users in Ukraine.

The conference topics are quite broad and covers the analysis of the macroeconomic situation in post-crisis conditions, the financial sector, banking system, energy, saving demographics, healthy lifestyle. The following Videoconferences of World Bank took place last year:

- March 11, 2010 - «Ukraine in 2010: ways and scenarios to overcome the economic crisis» (with Martin Raiser, World Bank Director for Ukraine, Belarus, Moldova),
- March 29, 2010 - «Energy efficiency: A new resource for viable growth»,
- April 16, 2010 - " To be European, young and healthy. Presentation of researches on health and demography in Ukraine and the comparison with the experience of other European countries».

Planned to continue holding such conferences on other actual socio-economic problems.

5. Conclusions

Thus, the using of global information, electronic resources in education provides new opportunities for the development of new learning technologies at all levels (preschool, school, higher and postgraduate), in particular remote, using Internet technologies.

At the same time the fundamentally new problems arise in the training organization on the basis of electronic resources related to teaching methods, its personalization, oversaturation of the global media and educational space by redundant information, and search information problems on informal, cognitive principles and criteria.

Described practical example of Kharkiv National University of Economics and the World Bank cooperation shows the possible solutions to solve these problems in conditions of post-crisis emerging economy in the former Soviet Union.

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IMPACT OF E-BOOKS IN UNIVERSITY STUDENTS LEARNING PROCESS

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Abstract

Is reading just reading? What do we mean when we talk about "reading" an electronic book? Is this perhaps depending on the situation? Is it different when we are reading for leisure or reading for learning? For information gathering or emotions? Reading longer or shorter texts? What impact does the device we read on have, from books to screens to reading tablets? What is reading for learning as compared to reading for other purposes?

These are major questions that I will not touch. Instead, I will be looking closely at one small issue: How can the emergence of e-books impact the university students learning process, and how can the university library help our students use this source of information in the most efficient way?
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Keywords: E-books; Students; Learning; University libraries

1. Background

Some research into the reading processes after the emergence of e-books suggests that reading as an activity in it self is changing. There are several definitions of e-books, and one can be:

> An e-book, (electronic book or digital book) is a publication in digital form produced on, published by, and readable on computers or other digital devices, either a copy of a printed book, or published solely electronically. It may be read on special e-book readers, or on ordinary computers.

In many instances the book and its content still appear to be the same, even though the format has changed. What is the difference between reading a work of fiction in a paperback or in a Kindle when one reads at the beach or in an airport, for example? In other instances the information value of the contents may wary depending on the device – to use the Kindle as an example again: The current devices show only black and white; no colour, so it is not good for texts where the illustrations are important.

A lot of research has been done into different aspects and issues with e-books, e-readers and the uses. In this paper I will concentrate on one very specific use – the use of e-books in teaching in Higher Education. How can the emergence of e-books impact the university students learning process, and how can the university library help students use this source of information in the most efficient way?

2. Earlier research and surveys

Some user surveys on e-books in Higher Education indicate that students and academics are using the e-books like they also use e-journals; by browsing the contents, searching and going

back and forth in the contents. This is as opposed to the traditional view of how printed books are used; by being read from start to end

2.1. JISC national e-book project

In 2007, the British Library organization JISC (formerly the Joint Information Systems Committee) started a national e-book project to investigate how e-books were used, and what impact free e-books for students through libraries can have for the sale of text books. The aim was to provide evidence- and research-based decision making for all concerned; libraries, students, academics, publishers and booksellers.

The project offered a range of text books in medicine (not mental health or nursing), media, engineering and business and management studies, available free of charge for students through academic libraries. The students' use of these resources was observed and analized in depth to uncover impact, attitudes, perceptions and actual use.

JISC's study confirms that the e-books are used as reference works and for short quick reference and search.

There are major challenges around the technical platform: Both users and librarians in JISC's survey found that the large variation in the offer made e-books complicated and difficult to use. Library catalogue, and links from library web pages are important gateways to e-books.

2.2 Elsevier and Springer

Two of the e-book suppliers, Elsevier and Springer, have also done market research about the use of e-books in academic libraries.

> "EBooks provider substantial advantages two libraries and their users. Both parties gain from 24 / 7 access, Simultaneous user access, wider selection, and immediate updates, while libraries also benefit from back-end efficiencies, such as a lack of storage requirements, reduced maintenance costs', and reduced staffing hours for physical action and processing of print books. "Springer

2.3 Briddon et al

Briddon et al (2009) have made a three-part study from a university in the UK, where they find that e-books, with their superior accessibility and search capabilities, largely seem to be the academics preferred source of information, within the areas where they exist.

It is an interesting paradox that e-books in this survey is seen as giving added value particularly in the traditionally bookish subjects of the humanities such as history and linguistics, while the JISCs large project does not cover these subjects, but especially medicine and engineering, traditionally considered subjects that find their information in journals.

What according to Briddon et al study in the UK promote the use of e-books are primarily students' frustrations over the lack of access to important books, when the printed copy is on loan. Similarly JISCs report suggests that when a student first has been "forced" to use e-books as the printed copy of an important text is unavailable; the threshold of using an electronic copy fall significantly. In addition, it appears that lack of training and knowledge of e-books is the biggest hurdle for usage of e-books. This means that additional training and information, especially of university teachers, will be important means for more use of e-books. It is also important that the e-books can be found in the OPAC.

2.4. Shelburne and Springer

Wendy Allen Shelburne, Electronic Resources Librarian at the University of Illinois, Urbana-Champaign, in cooperation with Springer, did a major survey in 2008 over the use of and attitudes to e-books through their university in a Dutch, a German, a Finnish and an Indian university / academic libraries. In the article from 2009 she relies on data from the University of Illinois. Her conclusion is clear: "Clearly if libraries make e-books available to their users they will be used." (Shelburne 2009 p 65) At the same time: "The open comments on why e-books have not been used are especially interesting and indicate that lack of awareness of the content is clearly a problem "(Shelburne 2009 p 61)

2.5. Slater

Robert Slater may stand as representative of a different part of the research into e-books, namely the one that deals with collection development. His article from 2009 addresses the question of which books are most used - in print or online, and if there is any difference whether the selection of the electronic happened locally in the library or as part of a larger package. The study was conducted in a university library in California.

In his review of previous research, Slater finds that it mainly seems that e-books have traditionally had equal or greater use than the corresponding printed, and that in recent years to an even greater extent, the electronic books to be used. There are some areas where it is more popular with electronic books than others. Slater, 2009 s 32

One of the interesting findings Slater is in information science / computing, where the printed textbooks disappear as a result of theft, which is not possible for e-books. Slater tries to compare the use of Safari (where the individual library has great control over the selection of the collection) with NetLibrary, which increasingly appears as a "package", with printed books. Because of differences in format and allows this model is only partially possible, but the trend seems to be that the locally selected collections are used most.

This can however also be related to the fact that NetLibrary requires a special reader, which seems to entail a higher threshold for use.

2.6. Joint

Nicolas Joint (Joint 2010) has the following comments about what it takes to get e-books to "take off" in the library of the future:
- First, there must be an adequate "business model", eg in line with file sharing for music
– Text books for students must meet the students' needs and not, as now, be built around what development "techno freaks" want. Compared with the relatively ease of reading articles in journals in an electronic format, he comments that all the additional services to e-books also make them more complicated to use then maybe neccesary.
- Libraries want better tools to find e-books. (Joint 2010)

The latter is also supported by many other studies, eg, Briddon et al (2009) their findings.
Two of the early findings from JISCs large study from 2008 concerning the use of e-books: that academics (both staff and students) do not read the books - they read the parts, and that all age groups, read on screen, and with enthusiasm - they do not prefer paper.

2.7 Summary of the student experience

To sum up what seems to be the student experience:

1. E-books are a part of academia - JISC found that almost 65% of all students and academic staff have been using e-books.
2. Reference books and text books are the most commonly used e-books. Other kinds of e-resources, like journals, have been a part of the student experience for a long time.
3. The technical aspects can be seen as a hindrance. Still, some of the surveys done suggest that once students have been "forced" by necessity to start using e-books, they seem to have crossed a threshold and will continue to use them.
4. The demand for textbooks in libraries far exceeds supply, and this leads to frustration from both students and teachers. For libraries textbooks in e-format comes as relief and supplement.
5. The loan of textbooks fluctuate greatly in line with the academic calendar, and e-books also seem to provide a greater degree of flexibility in that they can be read at all times and also from outside the campus.
6. The possibility to link directly to learning platforms is assumed to have a positive effect.

3. Implications for teaching

It is clear from the surveys and research that we have looked at so far, that the e-books are now an integrated part of the life and work tools of researcher's and academic staff at institutions of higher education. This means that they also will be "spilling over" to their teaching and the students.

E-books can have a pedagogical value in themselves if the teachers and students learn how to utilise them properly. The e-books can support "problem based learning" by giving the user access to reference tools, thesauruses, interactive software etc. This will be an advantage when seen in connection with pedagogical development, and the ongoing transformation of libraries into learning centres.

The extra value users may find when accessing e-books can be various services or functionalities, such as the opportunity to:
• Look up references listed in a document
• Look up a word unfamiliar to you in a dictionary
• Translate selected phrases, if you do not understand the language used in the text
• Search an encyclopaedia for more information
• Access related maps or other multimedia materials containing background information
• Make notes or mark relevant text passages
• Add bookmarks
• Find related bibliographies and addresses to evaluate the author
• Cross search the library catalogue to find relevant additional sources
• Search the web to find more information about the subject
• Export references and citations to reference handling tools
(Mikki and Stangeland, 2006)

Some of these functionalities are included to give users the same options as they have when reading a printed book and some are there for "added value". Some of them are useful; they involve the reader, and can thus make the learning process more effective.

E-books also meet the demand for more efficiency within teaching and research by being more available, offering possibilities for searching within texts, in multiple databases, combined with bibliographical tools and implemented software etc. The enhanced availability comes from the internet being open 24/7. One may also see that this enhanced availability is especially

beneficial for groups of students that face different kinds of challenges, like students with small children, distance-education students, foreign students and e.g. handicapped students. (Landøy et al, 2004)

The fear that some of the university staff expresses at their students becoming "intellectually lazy", and also of the threat of plagiarism requires a new kind of teaching, where the aspects of information literacy and information evaluation are more in focus. This also may open for a closer collaboration between the subject teachers and the library, either in the form of embedded teaching in information literacy in the ordinary teaching in the subjects, but taught by the librarians; or by the academic staff having the competences to teach this.

The representing of the e-books in the library OPAC can also be a challenge. Often, e-books are adopted into OPACs that have not changed substantially since the days of the card catalogues. This can mean that the students will not have full benefits of the e-books' advantages, for instance that they are available in full text. What will be the need for key words, for instance? At the same time, there is a significant danger of information overload.

To address both these questions it is evident that students will need to learn new ways of searching for information, that will both include the sorting and evaluation of information, and the proper use of this information once found.

JISC's survey revealed a significant group of users who are early "adapters" to e-books. They read more and longer texts in e-format, with a positive attitude to e-books and libraries and are important opinion makers. This will be an important group for the university to find and research, in order to have an ongoing dialogue about the best way of using the e-books, that many university libraries will purchase dearly.

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The Changing Paradigm of Reading and the Implications of Recent ICT Development

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Abstract: The argument of the present paper is tightly connected with the previous presentation - entitled *Re-inventing Culture in the Information Society. A Sustainable Approach* - delivered on the occasion of the First International Conference on Information Literacy (Sibiu – 2010). The paper will consider the concept of sustainable education as well as the contribution of ICT to the development of sustainable communication, especially the emergence of new reading devices (e.g. e-book readers) versus traditional reading and printing technologies. The presentation also includes a survey addressed to a number of 54 students at LBUS meant to investigate their information literacy competence.

Key words: information literacy competence; printed book vs e-book; ICT and contemporary libraries

WEB and WAP Health Information Tools for Lifelong Health Learning

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Abstract: WEB and WAP Health Information Tools for Lifelong Learning. **Introduction:** In this paper, is presented, the result of a multidisciplinary and multi-partnership team research project conducted in 2005-2008, part of the National Research, Development and Innovation Program - Research of Excellence (CEEX, Competition 1,2005). **Objectives**: The objectives of the EDUSAN project were to create a web and wap portal with Health Information for Lifelong Health Learning for every citizen who wants to improve the level of knowledge, regarding prevention of diseases and for a healthier life style. We use the results of the research, the information database, as instrument for the development of the health knowledge for Medicine Students and Resident Physicians in the process of learning and information. **Methods**: EDUSAN's database have information provided by specialists in human anatomy and health education from "Carol Davila" University of Medicine and Pharmacy and from the Public Health Institute Bucharest (ISPB). **Results:** The results of the research are: the portal EDUSAN for web (www.edusan.info) and the portal for wap (www.edusan.org) for mobile access to the database. **Conclusions:** The web and wap portal can be accessed and consulted by every citizen on PCs but also by high speed mobile communications (EDGE/GPRS/3G). The Medical Informatics and Biostatistics Laboratory of the Faculty of Dental Medicine, has organized the EDUSAN Information Centre, in order to implement the applicative research results on learning process designated for medicine students and resident physicians. In this place they can access the information stored in the system database by touchpad screen monitor, from outside the Lab.

Keywords: *e-health, health information, healthcare education, lifelong health learning, WAP, WEB*

1. INTRODUCTION

The *"Education for Health"* is essentially an educational activity that implies a certain form of communication meant to improve knowledge, to develop understanding and favorable habits for health.

The Education for Health has targeted the individual but also the collectivity providing information regarding healthy lifestyle but also risk behaviors.

The complex integrated system – EDUSAN – is part of the newest types of health education applications to include : motivation of the users regarding the educational contents and moderns method, obtaining better results in the process of learning, developing new competences such as: communication, media and digital competences, overcoming cultural barriers, achieving cognitive abilities determined by digital information, as observation, visualization, systematic approach, processing of information.

Internet has become one of the most used mass media in the world. At the same time, more and more Internet users have become aware of the risk brought along, and agreed on how difficult is to have access to reliable information. The impact of a website on health information users (healthy subjects, current or future patients) is one of the most important preoccupations of the specialists in the health domain, decisional organisms, and last but not least of the computer experts'.

This type of approach is relatively new in our cultural pattern; to date experience is encouraging [1].

The Romanian system named *The complex integrated system regarding health and prevention education* – EDUSAN mainly aims to increase health knowledge level and information, targeting the prevention of diseases, facilitating education with respect to prevention, and also as a new emphasis *improving* people's health [2].

The System contains information by which citizens learn how to preserve their health state and "green" longevity (ageing-population's quality of life), and also to use epidemiologic tools to identify the highest risk population, to prevent and limit diseases, to get public aware of the necessity of early diagnosis by using tests, analyses and screening.

2. OBJECTIVES

The objectives of the EDUSAN project were to create a web and wap portal with Health Information for Lifelong Health Learning for every citizen who wants to improve the level of knowledge, regarding prevention of diseases and for a healthier life style. This could facilitate an early diagnosis and improve the capacity of preventing diseases in the cases of those who keep them informed from this portal. Posting health multimedia content make the information more attractive and this portal may become a multimedia model for the promotion of health and to realize a health information space for health knowledge research and discovery. We use the results of the research, the information database, as instrument for the development of the health knowledge for Medicine Students and Resident Physicians in the process of learning and information

3. METHODS

EDUSAN's database have information provided by specialists in human anatomy and health education from "Carol Davila" University of Medicine and Pharmacy and from the Public Health Institute Bucharest (ISPB).

The complex integrated system – EDUSAN was designated to store collections of medical information related to: immunization, screening, prophylactic strategies and methods, risk factors, occupational health, environment factors, information about public medical institutions, educational models for children and for various communities, medical publications and information libraries, applications for disseminating information, analyses from territory, and collaboration between public institutions playing an important role in the public health system [2].

3.1. The EDUSAN database architecture

System's authorized users (previously registered and validated by the system administrators) are able to input their data, by using on-line forms, supplied by the system.

EDUSAN's database has been loaded up and tested online with the information provided by specialists in human anatomy and health education from "Carol Davila" University of Medicine and Pharmacy and from the Public Health Institute Bucharest (ISPB). The medical-prophylaxis information contents have been compiled and validated by the "Healthy Life Style" unit of the the Public Health Institute Bucharest.

The data collection of the EDUSAN complex system is organized in a single relational data base system. The data base has integrated several different data bases which were interconnected by key fields, each of them corresponding to a certain component subsystem [3].

The EDUSAN database is structured on hierarchic levels as in Figure 1 [3].

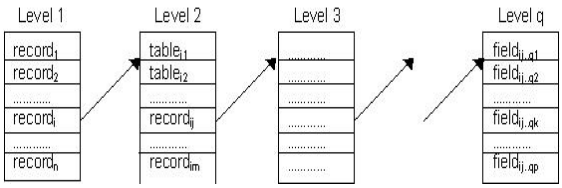

Figure 1
EDUSAN database structure

The structure of stored information in the EDUSAN database is represented in Figure 2. [3].

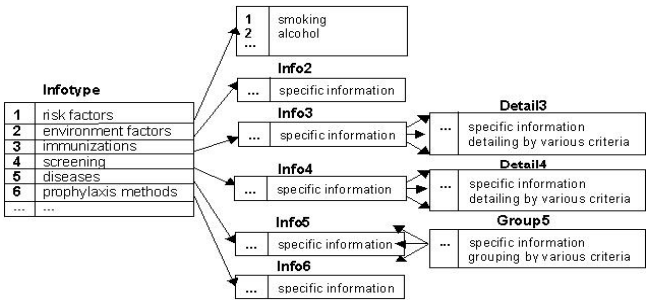

Figure 2: EDUSAN information database structure

Professional information regarding elementary notions of human anatomy has been structured on apparatus/systems/organs/segments of the human body, accessible to a user with medium human anatomy knowledge.

The information regarding diseases was organized according to "International classification of the diseases, trauma and death causes", version 10 issued by the WHO.

Affections known to have an acknowledged etiology addressing unfavorable lifestyles have only been selected. The texts have been structured according to the following scheme: definition, global and local epidemiology, causes, risk factors, protective factors, semiology, medical behavior, primary prevention (before illness), secondary prevention (life style during the period of treatment) and tertiary prevention (life style through recovery/rehabilitation period).

4. RESULTS

The results of the research are: the portal EDUSAN for web (www.edusan.info) and the portal for wap (www.edusan.org) for mobile access to the database. Another result of the project is the Edusan Information Centre where information regarding the content, structure of the database is posted and the students can access and browse the information stored in the system database by only touching the screen monitor, from outside the Lab

The intranet copy of EDUSAN web portal has been implemented in the Laboratory of Medical Informatics at the Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy in Bucharest, and the "Health and Prevention" subsystem's information database has been updated [5].

4.1 The system's architecture

In designing the system has been imposed a three leveled client-server architecture. Between two adjacent levels there is a communication interface, defining the operations and services provided by both, inferior and superior level.

The architecture of the complex integrated system EDUSAN is modular, easily expandable to new functionalities, with no use of distorting the existent components or reorganizing the already

loaded data. The system's components are the EDUSAN database as well as the software modules designed to implementation of the functions supplied by the system. The EDUSAN system contains different type module programs as following:

Programs for the display of the information EDUSAN database (web and WAP applications)

Programs for acquisition and update of the existing information in the EDUSAN database.

Registration and authentication programs granting rights to those users willing to update the content of the database. After registration, the administrators of the system would allow these users to add and/or edit information according to the EDUSAN database.

The system has been developed by using PHP technology. Apache is the WEB and WAP server application. My SQL has also been used as database server.

Some of the PHP pages need connection to EDUSAN database. The data obtained by interrogating EDUSAN database as well as the resultant information obtained by processing PHP page, are consequently encapsulated in a XHTML format and forwarded towards the mobile browser as a given answer to its request.

Transmission of the information via text messages uses a GSM/GPRS modem connected to the web application. The request made by the user toward a PHP page by using the mobile phone browser can be received and processed by the server. Therefore the vital information (alert type) can be sent by texts simultaneously to all the registered users whom previously have expressed their agreement to receive this kind of information.

Figure 3 presents the logic model of the EDUSAN WAP application.

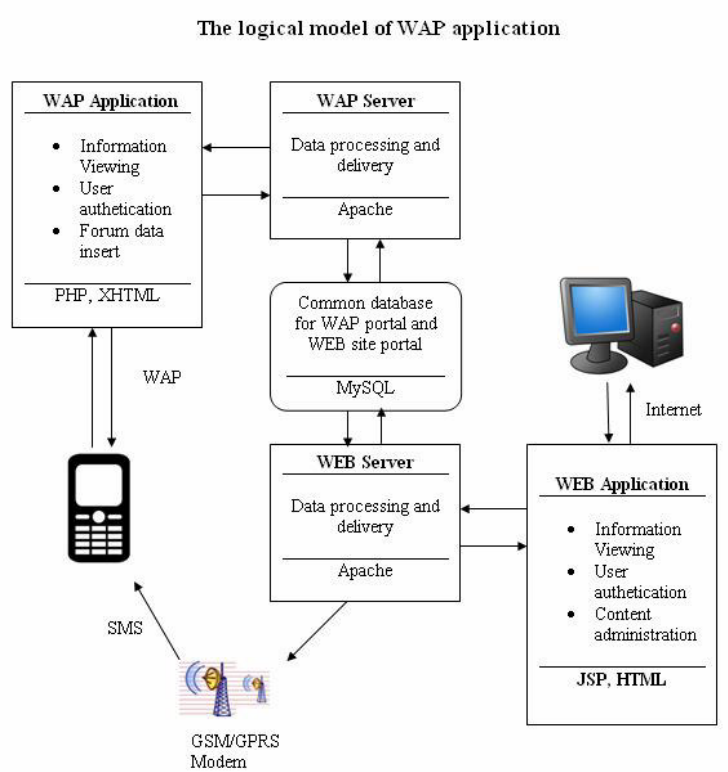

Figure 3: The logic model of the EDUSAN WAP application

4.2 The WEB EDUSAN user interface for computer access

The visualization of the information from the EDUSAN database is done trough Internet with PC's by any browser: Internet Explorer, Mozilla Firefox, Google Chrome, Opera etc.

Figure 4: WEB user interface – Home Page

The EDUSAN WEB interface has some usual buttons as: Homepage, About us, Website map, Contact. A search menu for searching inside the content of the portal is present in the top/right part of the page. In the left part, menus with the informational subsystems of the page are present and down under the authentication menu permit the authorized users to enter the system, after introducing the username and password – figure 4.

Figure 5 : WEB user interface – Drop Down Menus

The EDUSAN WEB interface provides the possibility of consulting the existing information from EDUSAN's database, referring to the subsystems, from the dropdown menu from the left of the page (figure 5):

Health and prevention
Educational models
Medical publications
Anatomy notions
Institutions collaborations
Dissemination facilitation
Forum

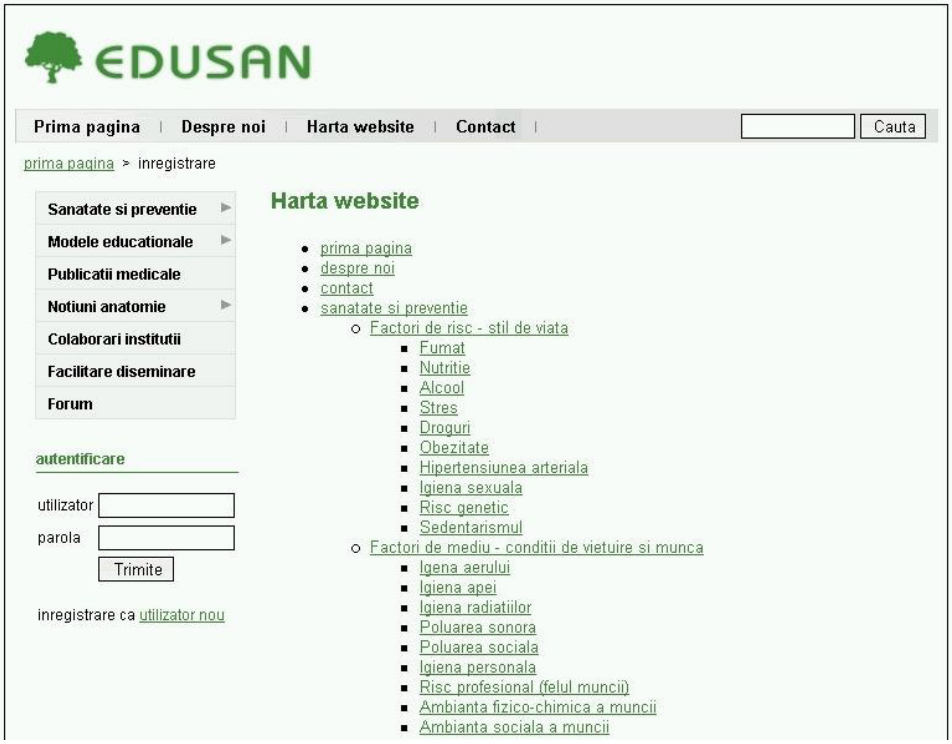

Figure 6: WEB user interface – Website Map

The Website map offer for the visitor, a general view about the structure of the information from the site, making sometimes easier the navigation to the desired section of the site (figure 6).

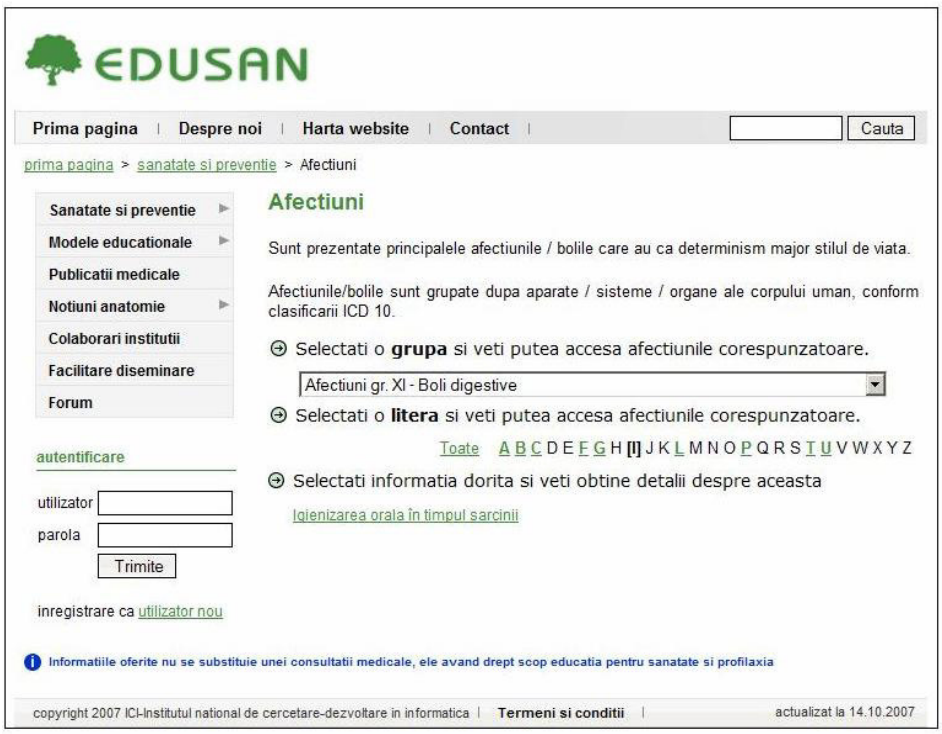

Figure 7: WEB user interface – Affections submenu

After the visitor access one of the subsystem, several possibilities for browsing the content appear. The visitor may select from a menu the next subsection, select the letter of the start of the name of subsystem and bellow will appear a link list, all starting with the selected letter. This way the visitor may select and visit the desired subsection link (figure 7).

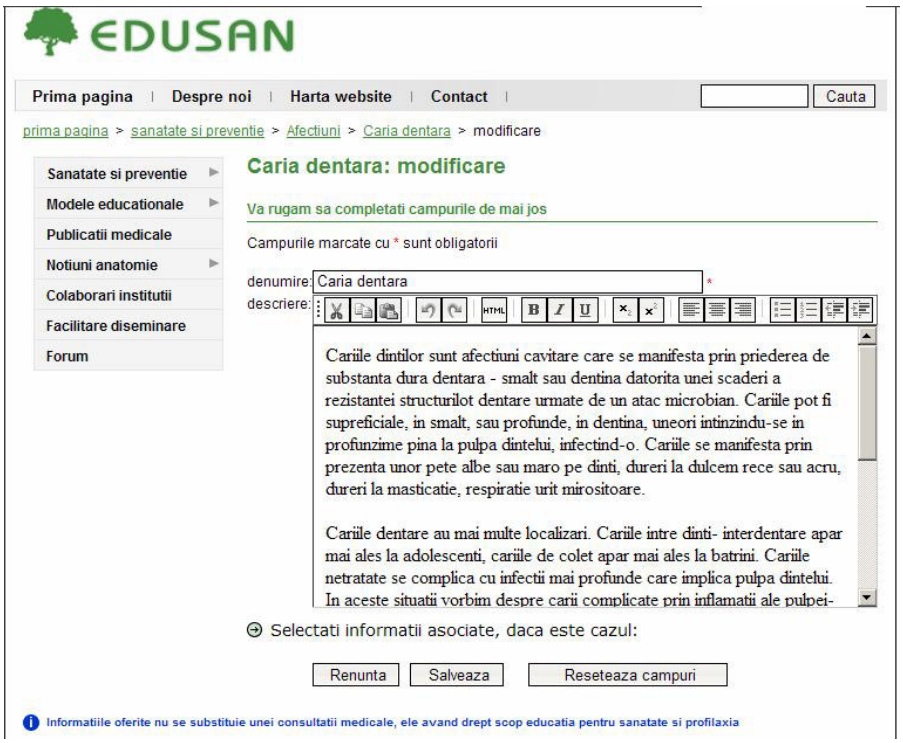

Figure 8: WEB user interface – Editing content menu

In the web EDUSAN interface, system's authorized users (previously registered and validated by the system administrators) are able to input their data, by using on-line forms, supplied by the system, in menus similar to the menu from figure 8 .

4.3 WAP EDUSAN user interface for mobile phone access

The visualization of the information from the EDUSAN database is done trough Internet with PC's and also by mobile phones with EDGE/GPRS/3G technology facilities.

WAP user interface is realized by a mini browser localized in the mobile phone. All new browsers were provided with a XHTML support.

The user interface has an intuitive character, by being friendly and ergonomic. In principle, the user interface has a unique structure; the difference could be generated by access rights granted for different user's categories (system administrators, contents authors).

Browsing along pages of the EDUSAN WAP optimized portal, is done by a adequate browser, either from a desktop, or mobile computer(laptop, notebook, notebook, or other smart devices – smarts) or by a mobile phone (smart phone) (Figure 9)

Figure 9: WAP EDUSAN user interface for mobile phone access

The EDUSAN WAP application provides the possibility of consulting the existing information from EDUSAN's database, referring to [4]:

-Subsystems:

Health and prevention

Educational models

Anatomy notions

Forum

Medical publications

Newsletter

- Auxiliary modules

Contact

Terms and conditions

The interested user can access from the mobile phone information regarding immunization, screening, strategies and prophylaxis methods, risk factors, environment factors, educational models for collectivities types, human anatomy notions and medical publications stored in the database through EDUSAN web portal [5].

Some sections of wide interest have been optimized by being accessible for reading from mobile phone screen, using an Internet browser (Figure 10).

Figure 10: WAP EDUSAN interface subsystem "Health and prevention"

The main menu is attainable from all pages of EDUSAN WAP portal and can be quickly accessed by using the keys of the mobile phone. On every page bottoms' lays down a search form to the portal, also based on key words (Figure 11).

Figure 11: Search Interface in the EDUSAN database

The specific results corresponding for the search of keyword “dinti” – “teeth” are displayed on the mobile screen like in Figure 12

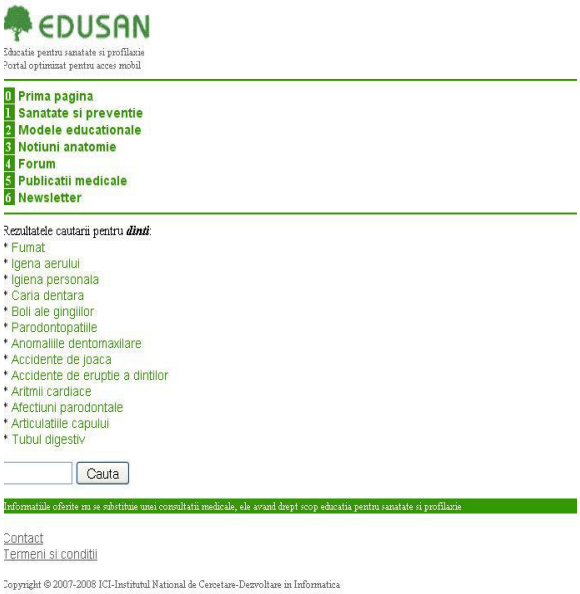

Figure 12: The interfaces with the EDUSAN database search results, after keyword “dinti”- “teeth”

As a result of data base interrogation process, the information is automatically taken from the database portal, and reciprocated to XHTML Mobile Profile standard format.

The information and data resulted from the processing of the PHP page are all together sent toward the mobile browser as an answer to the request made by this.

On each page bottoms’ could also be visualized both contact information and the project’s technical coordination (Figure 13).

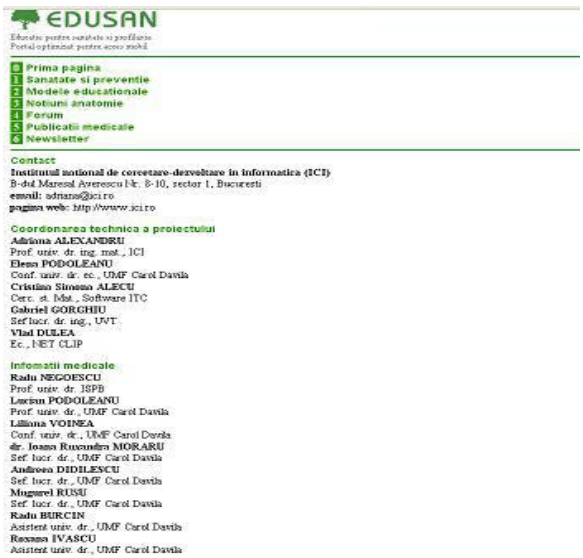

Figure 13: The Interface containing the contact information data and the technical coordination of the EDUSAN project

The vital information (alert type) can be sent simultaneously by SMS (text messages) towards every registered users whom previously expressed their agreement to receive this kind of information by completing the web form displayed, as in Figure 14, http://edusan.org/newsletter.php [4].

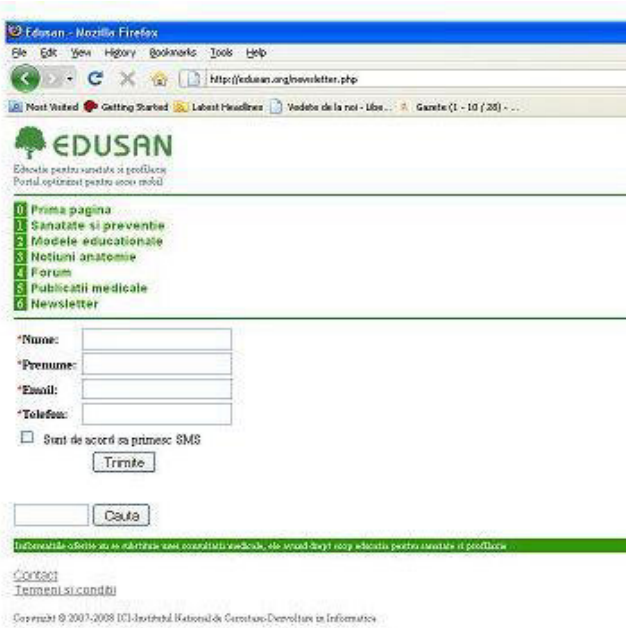

Figure 14: The interface with user information and agreement for receiving SMS (text messages)

4.4 EDUSAN Information Centre

The Medical Informatics and Biostatistics Laboratory of the Faculty of Dental Medicine, has organized the EDUSAN Information Centre and this way the applicative research results to be implemented on learning process designated for medical students and resident doctors.

Figure 14: The Edusan Information Centre

In this place students can access and browse the information stored in the system database by only touching the screen monitor, from outside the Lab. The visitors may also consult the posters nearby with information regarding the structure, content and web and wap access to the Edusan health portal and database.

5. CONCLUSIONS

EDUSAN system is an IT&C instrument addressed to visualizing database information from PC's by web acces and by mobile telephone a (the WAP EDUSAN application) and also to update online the specific information from the database (EDUSAN web application) by users previously authorized by EDUSAN Information Center administrators.

The web and wap portal can be accessed and consulted by every citizen on PCs but also by high speed mobile communications (EDGE/GPRS/3G). The Medical Informatics and Biostatistics Laboratory of the Faculty of Dental Medicine, has organized the EDUSAN Information Centre, in order to implement the applicative research results on learning process designated for medicine students and resident physicians. In this place they can access the information stored in the system database by touchpad screen monitor, from outside the Lab.

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E-Learning and Digital Libraries. Case study - children between 6-11 behaviour towards energy saving

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Abstract: eLearning represents today one of the major paradigm shift in education. In one of our former paper [1] we have presented the design and development of a web based adaptive system aimed to educate children for an electrical energy saving behaviour. In this paper we are discussing eLearning and digital libraries aspects, presenting the advantages of extending the previous web based adaptive system with a digital library. Again, we have selected a user-centred, interaction design approach. A new set of questionnaires have been developed in order to collect children' data on digital libraries.

Keywords: Digital libraries, eLearning, Software Architecture, Adaptive System, Interaction Design, User-Centred Design

1. ELearning

eLearning encompasses all the electronic methods of assisting the learning and instruction processes. The information and communication systems, be either connected to a network or not, can then serve specifically to the eLearning methods.

Essentially, eLearning means the transfer of skills and knowledge by using computers and computer networks. The eLearning processes and applications include web-based and stand-alone computer-based solutions.

The contents are delivered via internet or other computer network types, CDs, DVDs or other media like satellite TV. They can be utilised as such or supervised by an instructor. They typically contain text, images, animations, as well as audio and video streams.

Due to the great variety of technologies, models and prototypes available to eLearning, a set of standards need to be devised, so as to ensure a cohesive approach to the field. This is also necessary in order to meet certain quality expectations.

Efficient and effective distribution of on-line content, as in personalised training programmes, requires an adaptable, extendable and reusable educational content. In order for the educational materials to efficiently reach their targets, a number of standards or standard proposals have been developed. They all show the necessity of certain data structures and communication protocols through which the interoperability and reusability of the educational content and of the system components.

From this standpoint, eLearning can be viewed as a means through which present-day technology can aid the established way of transmitting knowledge from teachers to pupils. The effectiveness of concepts such as distance learning relies on eLearning tools to overcome temporal and space restrictions.

A standard is defined through a collection of specifications (details pertaining the functional requirements) that need to be implemented by the producers of the educational content as well as by the developers computer-assisted training systems.

The designing of educational standards is performed in stages and is a complex activity that involves researchers from various organizations. The process of creating web-based educational standards is also an iterative one. It contains 4 steps: [2]

1. Research and prototyping for the identification of possible solutions. The promoters are universities, companies and consortia.

2. Requirements specification. Whenever a solution appears that has the potential of entering general use, a documenting process commences, which produces a set of specifications that can be implemented. These operations are usually performed by a work group, a consortium, an organisation or a group of collaborating institutions.[3][4][5]

3. Development and testing. Testing of the specifications on pilot systems so as to adjust the final output based on user feedback.[6]

4. Accreditation and international recognition. The complete specifications of the tested system are taken into account by and accredited standardisation organism where they are reviewed, transformed into applicable standards and finally subject to vote. If the standard is approved, it is subsequently made open to the public by these same organizations.

The specifications are made standards in time, either by a certification from a standardisation organism, or through public use.

SCORM (Sharable Content Object Reference Model) is one of the most commonly used standards for eLearning. It was defined by ADL (Advanced Distributed Learning) and it envisions itself as a means of ensuring access to the highest level of education and training, adapted to individual needs, easily and efficiently deployable anywhere, and showcasing interoperability, accessibility and reusability of the educational content. SCORM combines elements of the specifications IEEE, AICC and IMS.

2. eLearning in schools

The "Sistem Educational Informatizat" (SEI) program is part of the Romanian education reform and conforms to the objectives proposed by the "eEurope" eLearning initiative of the European Union. As consequence of this program, an eLearning solution has been implemented throughout the high schools in Romania, termed AEL (Asistent Educational pentru Licee). AEL 3.0 was produced by Siveco Romania SA and used by the Ministry of Education and Research as part of the strategy to promote projects in which information technology is promoted. It won the prize for the best software solution for education in the year 2002.

3. eLearning outside school

According to a CATIbus study performed by Mercury Research in february 2009 on a 680 people sample from the Romanian cities and aged 18 or older, more than half of them (68%) use the Internet. Also, the study shows that the e-mail and the instant messaging programs are among the top activities for which the internet is used. Youths aged 18 to 24 are the most active internet users and personal communication is their main activity (92% declare that they use internet primarily for this purpose). At the other end, the largest percentage of people aged over 55 do not use the online medium at all.

Among the top activities cited by the enquired population, personal communication is the most important for 52%, followed by web surfing (35%) and music, movie and games downloads (31%). Financial transactions occupy the sixth place (11%). Only 4% of them use the internet for professional information and merely 1% search for medical information.

There were no studies to be found on children younger than 18.

In our country, for children in schools and high schools, eLearning is narrowed down mostly to websites publishing ready-made school projects. The pupils' lack of training leads them to performing plagiarism more often than it does to aid them accumulate new insights into the fields they are studying.

4. What a digital library is

In 1972 UNESCO launched the "Charter of the Book", an essential document for the foundation of a modern cultural policy. This includes several principles that synthesize the functions of the book in the contemporary society:

- everyone has the right to read and benefit from the goods of lecture
- the books remain pivotal instruments of conservation and propagation of knowledge accumulated in the world
- they are indispensable to education

"The Charter of the Book" acknowledges that libraries are an important national resource and regards them as a public service that "favours reading", and which store and spread information and knowledge in all the fields.[7]

Whilst analysing this phenomenon within the American society, professor Alvin Kernan [8] shows that changes that have occurred in communication technology do not only change economical praxis, but also the knowledge of the people. Thence, a "crisis of the book science" appears. Some surveys show that approximately 13% of U.S. inhabitants are illiterate, and from amongst those who can read, 60% will not willingly read a book, a magazine or a newspaper. They would instead spend on average seven hours a day in front of the TV.

Along the history of human civilisation 5 "informational revolutions" have occurred:

- The invention of writing
- The invention of typography
- The introduction of mass media
- The invention of the computer
- The fusion between computers and telecommunications

Based on the 5th revolution, millions of people have or will gain access to a multitude of fast and relatively cheap information services in various contexts. There are predicaments for the future of information technology: "Through its ambitious projects, the information technology revolution beckons one to think upon the long-term effects that it will have on the natural and human environment. Some of these effects might be highly unpredictable. The signals emitted by the hardware of tomorrow require special channels, provided through satellites, fibre-optics, etc. Most countries are involved towards large-scale implementation of own communication systems." [10]

There is a clear tendency for technology to provide constantly novel and extended capacities for the ubiquitously distribution of electronic information, irrespective to the way the relationship between the processing industry and the communication industry evolve. Specialists regard the library of the future as a database in which information occupies a very limited physical space. Of course, the old technologies will continue to be used alongside the new ones for a while. It is essential that during this transition period certain fixed mentalities be changed.

The library remains a viable institution as we commence the third millennium. It is expected that the way it looks will considerably alter and it is important that they come up to date with the advancements in technology that the world is facing.[11]

The “Association of Research Libraries” identifies the following elements in the definitions given to the digital library:[12]

- the digital library is not a singular entity
- the digital library requires a technology that is compatible with the resources of other libraries, a technology that ensures access to external resources
- the links between several digital libraries and information services are transparent to the end users
- the purpose is ensuring universal access to digital libraries and information services
- the collections of digital libraries are not limited to text documents, hypertext or hypermedia, but also encompass digital documents that cannot be represented or distributed in printed format

It is important to emphasize that the digital library contains 3 essential elements:

- the electronic library
- information and communication technologies
- the user

“It is a (possibly virtual) organisation that comprehensively collects, manages and preserves rich digital content on a long term, and which provides a variety of specialised functionalities for that very content to the community, with measurable quality and according to clear policies.”[13]

Digital libraries for children, or general-purpose digital libraries with children's sections are few. A few examples:

- IPL2 - http://www.ipl.org/
- Internațional Children's Digital Library - http://en.childrenslibrary.org/
- Charlotte Mecklenburg Library - http://www.storyplace.org/
- Children's Library - http://www.archive.org/details/iacl

Through what do children-oriented digital libraries differ from the general purpose ones? Some do hardly through anything, actually aiming towards the adult that is searching for children's books. Others, however, do own a different user interface that takes into account the fact that the end user is a child. In this case the interface is much more visually attractive, it is enriched by animated and sound media, it is simpler and does not contain any statistical elements. Metadata associated to the information may contain specific elements - it is interesting to imagine an interface that allows the child to sort books by colour, shape or by what state of mind they induce.

5. The Case Study

In our paper we are presenting a case study based on the developed educational software for electrical energy saving, software that will be extended with a specially designed digital library. The case study is considering users of 6 to 11 years of age. As in our previous experiment, for this category of users we had use a hybrid user-centred design methodology, blending different kinds of user-centred designs with interaction (social interaction, affective interaction) and participatory design and, taking into account learning objectives and learners age and preferences. 115 young pupils from both rural and urban locations participated in the design. 60% were girls and 40% boys, the age interval being from 6 to 11 years old. 89% had a computer at home. 85% have Internet connexion.

The digital library was built following the structure of the web application presented in [1]. The main chapters are:

1. What is Electricity
    a. Short history
    b. Experiments
    c. Sources of electrical energy
        i. Classical
        ii. Alternative
2. Using and saving electrical energy

The children were organised in two groups: one group was using the web application without the digital library, but having access to resources via classical search engines, and the other group was using the application enhancd with the digital library. In the case of this later group the tutore recommended to the children to use the digital library before going on Google. After 6 sessions the children of both group were presented with a test on energy saving aspects.

6. Results

The results of the energy saving test showed that the children in the group that used the specific digital library had a better understanding of the concepts that lay behind energy saving, and can communicate their knowledge using a richer vocabulary.

The difference in the scores obtained by the two groups was not statistically significative.

The case study suggested that the use of digital libraries in educational software may result in a higher quality of the learning process.

A new set of questionnaires have been developed in order to collect children' data on digital libraries. The balance was in favor of multimedia digital libraries (93%). 84 % consider that the digital libray is useful, and 32% have not a clear idea of what is a digital library. Structured

information was easier to manage. The need of guidance in the use of digital libraries was percived by more than 67% of the children.

Further studies will be conducted in order to have a clear picture of children preferences and of the best educational model.

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